

THE ARCHITECTS' JOURNAL



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★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to I on one week, I to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts.	
ABS	Architects' Benevolent Society, 66, Portland Place, W.1.	Welbeck 5721
ABT	Association of Building Technicians, 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain, 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association, 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction, 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. School of Architecture, Manchester Municipal School of Art, All Saints, Manchester, 15.	Ardwick 3480
ARCUK	Architects' Registration Council, 68, Portland Place, W.1.	Welbeck 9738
ASB	Architectural Science Board of the Royal Institute of British Architects, 66, Portland Place, W.1.	Welbeck 5721
AScW	Association of Scientific Workers, 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
BAE	Board of Architectural Education, 66, Portland Place, W.1.	Welbeck 5721
BATC	Building Apprenticeship and Training Council, Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre, 9, Conduit Street, W.1.	Mayfair 8641/6
BCC	British Colour Council, 28, Sackville Street, W.1.	Regent 3613
BCCF	British Cast Concrete Federation, 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association, Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association, 25, Victoria Street, S.W.1.	Abbey 5422-3
BEDA	British Electrical Development Association, 2, Savoy Hill, W.C.2.	Temple Bar 9434
BGC	British Gas Council, 1, Grosvenor Place, S.W.1.	Sloane 4554
BGF	British Gas Federation, 1, Grosvenor Place, S.W.1.	Sloane 8266
BIA	British Ironfounders' Association, 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education, 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors, 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council, 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade, Millbank, S.W.1.	Whitehall 5140
BRS	Building Research Station, Bucknalls Lane, Watford	Garston 2246
BSA	Building Societies Association, 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution, 28, Victoria Street, S.W.1.	Abbey 3333
BTE	Building Trades Exhibition, 4, Vernon Place, W.C.1.	Holborn 8146/7
CAS	County Architects Society, C/o A. Guy Chant, F.R.I.B.A., Salop County Council, 5, Belmont, Shrewsbury.	Shrewsbury 3031
CCA	Cement and Concrete Association, 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CDA	Copper Development Association, Kendals Hall, Radlett Herts.	Radlett 5616
CIAD	Central Institute of Art and Design, 41, 42, Dover Street, W.1.	Regent 3074
CIAM	Congrès Internationaux d'Architecture Moderne, Dolderal, 7, Zurich, Switzerland	
CID	Council of Industrial Design, Tilbury House, Petty France, S.W.1.	Whitehall 6322
CPC	Codes of Practice Committee, MOW, 42, Onslow Gardens, S.W.7.	Kensington 8161
CPRE	Council for the Preservation of Rural England, 4, Hobart Place, S.W.	Sloane 4280
CUJC	Coal Utilization Joint Council, 13, Grosvenor Gardens, London, S.W.1.	Victoria 1534
DIA	Design and Industries Association, 9, Conduit Street, W.1.	Mayfair 0477
DOT	Department of Overseas Trade, 35, Old Queen Street, S.W.1.	Victoria 9040
EC	Electricity Commission, Savoy Court, Strand, W.C.2.	Temple Bar 7565
EJMA	English Joinery Manufacturers Association (Incorporated), Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society, 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors, 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
FB 1951	Festival of Britain 1951, 2, Savoy Court, Strand, W.C.2.	Temple Bar 1951
FASSC	Federation of Association of Specialists and Sub Contractors, 21, Tothill Street, S.W.1.	Whitehall 9606
FBI	Federation of British Industries, 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission, 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries, 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd, Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District, Pennington House, Nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders, 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FRHB	Federation of Registered House Builders, 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England, 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
GG	Georgian Group, 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre, 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors, 75, Eaton Place, S.W.1.	Sloane 3158
ICE	Institution of Civil Engineers, Great George Street, S.W.1.	Whitehall 4577

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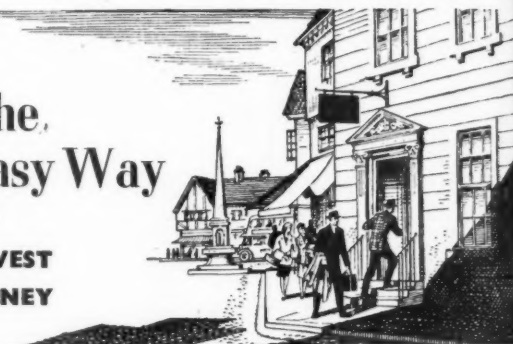
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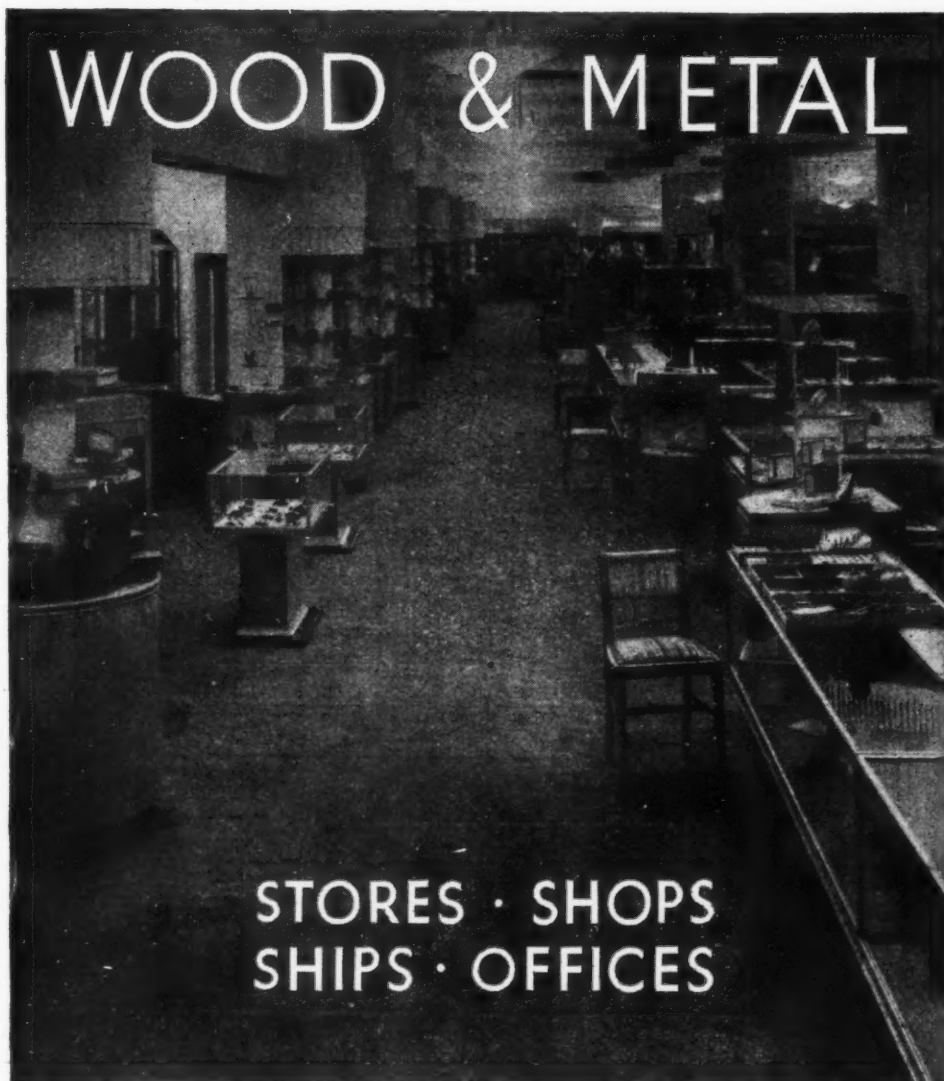
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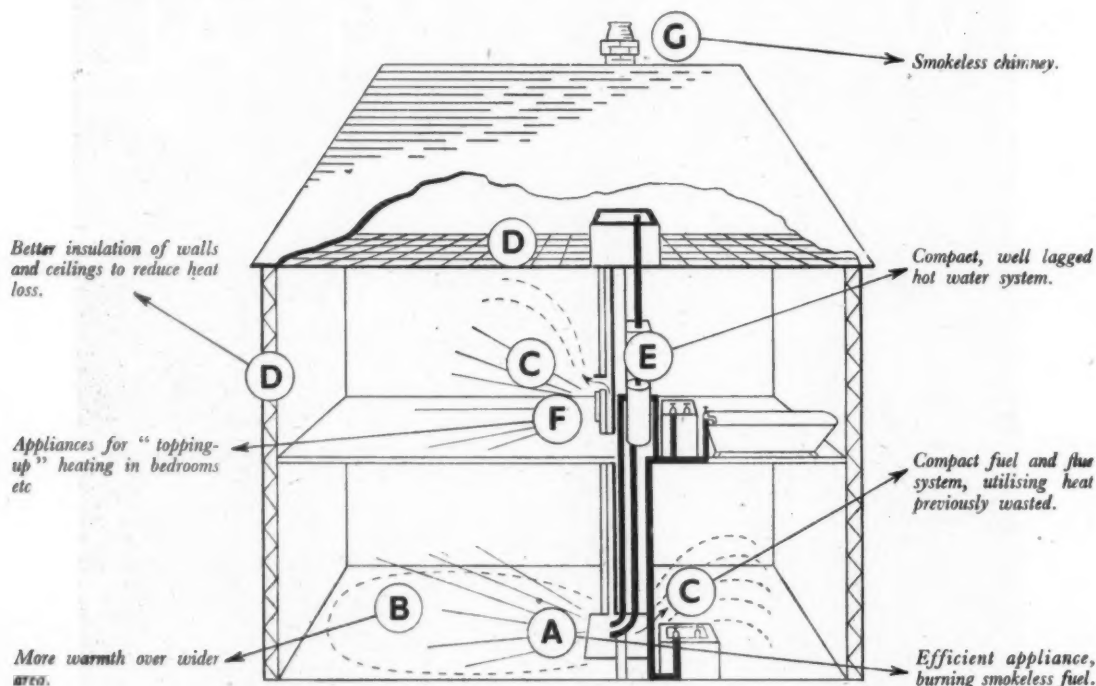
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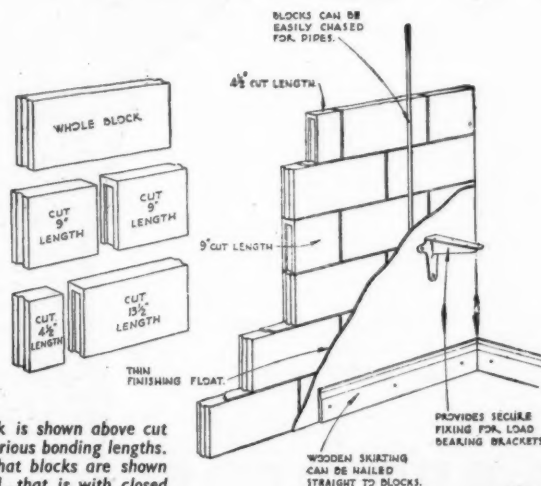
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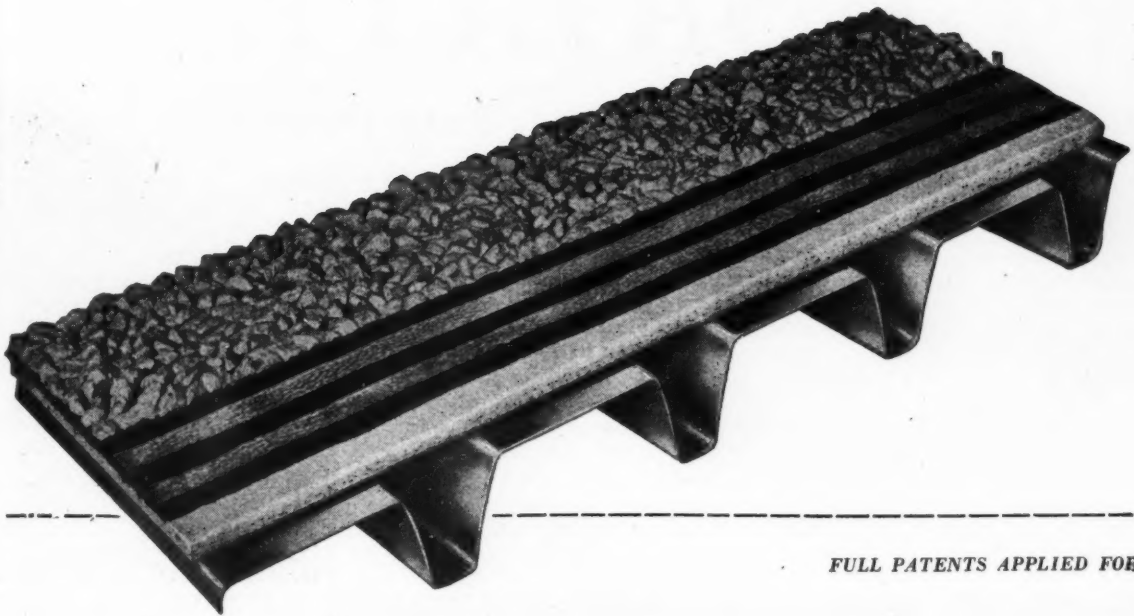


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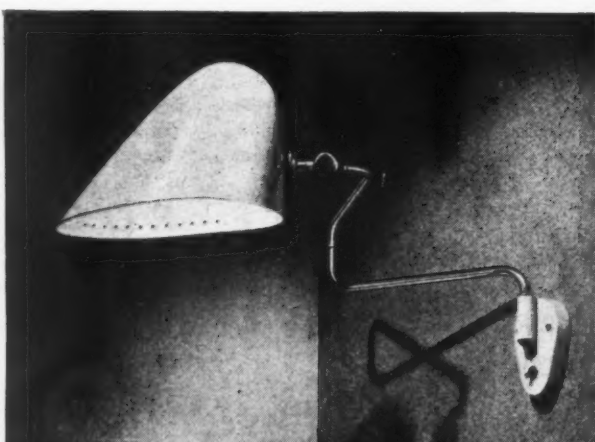
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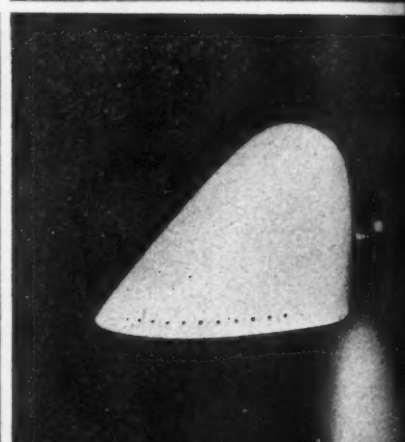
FV.8/S TABLE LAMP. Shade. Adjustable arm. Metal finishes—satin brass or satin chrome. Shade, ivory or peach plastic. Wired complete with switch.



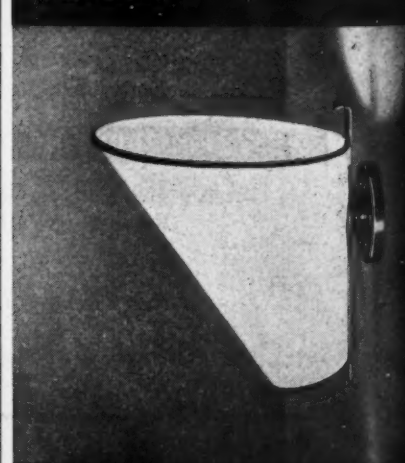
FV.2/R WALL BRACKET. Adjustable arm. Metal reflector. Metal finishes—reflector and back plate, ivory white; arm, satin brass or satin chrome. Complete with switch.



FV.2/S WALL BRACKET. Adjustable arm. Shade. Metal finishes—back plate, ivory white; arm, satin brass or satin chrome. Shade, ivory or peach plastic. Complete with switch.



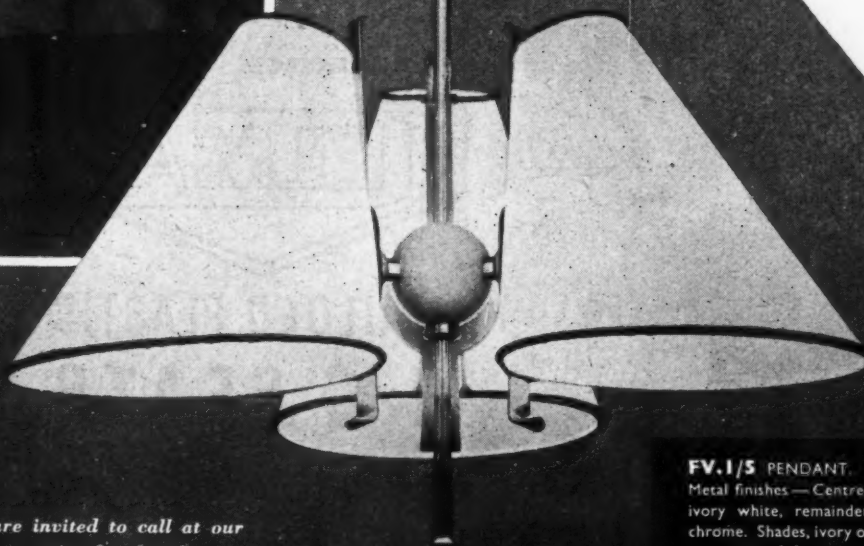
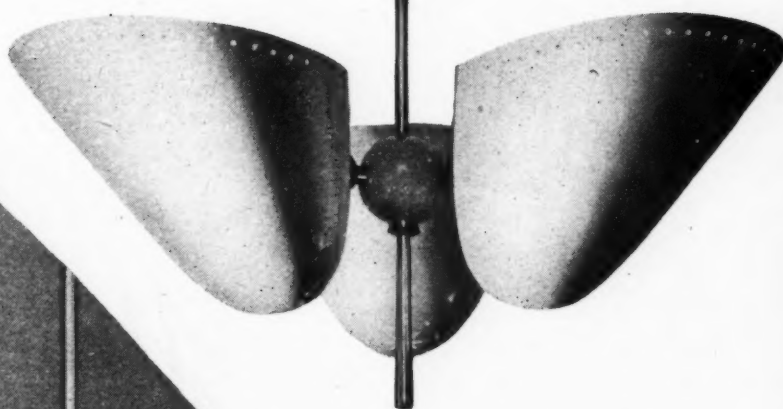
FV.3/R WALL BRACKET. Metal reflector. Metal finishes—reflector, ivory white; back plate, satin brass or satin chrome.



FV.3/S WALL BRACKET. Shade. Metal finishes—back plate, satin brass or satin chrome. Shade, ivory or peach plastic.

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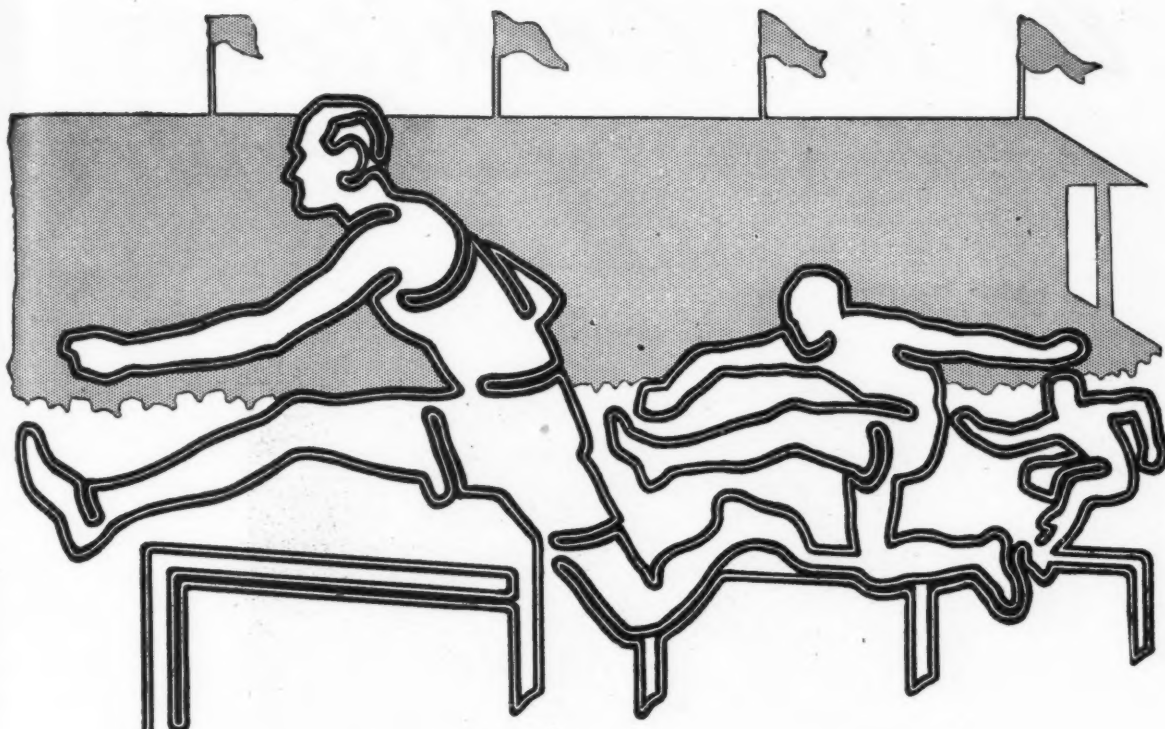


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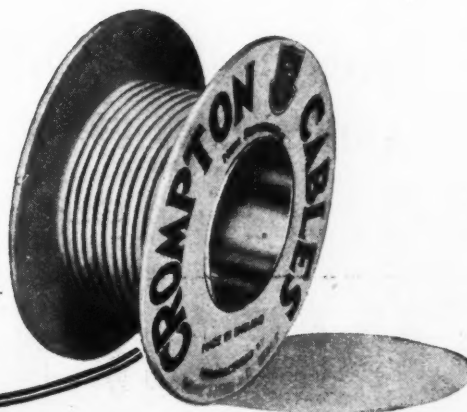
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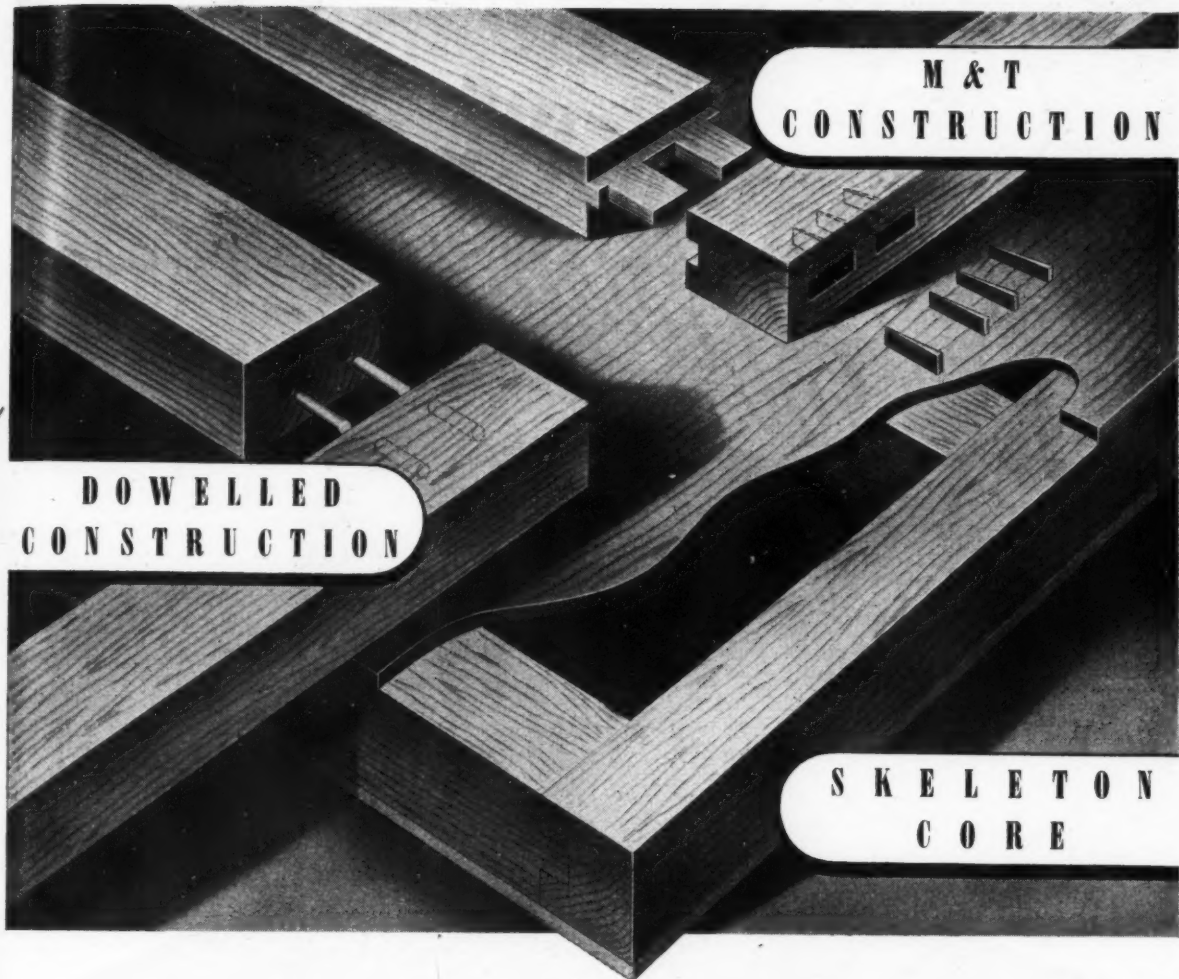
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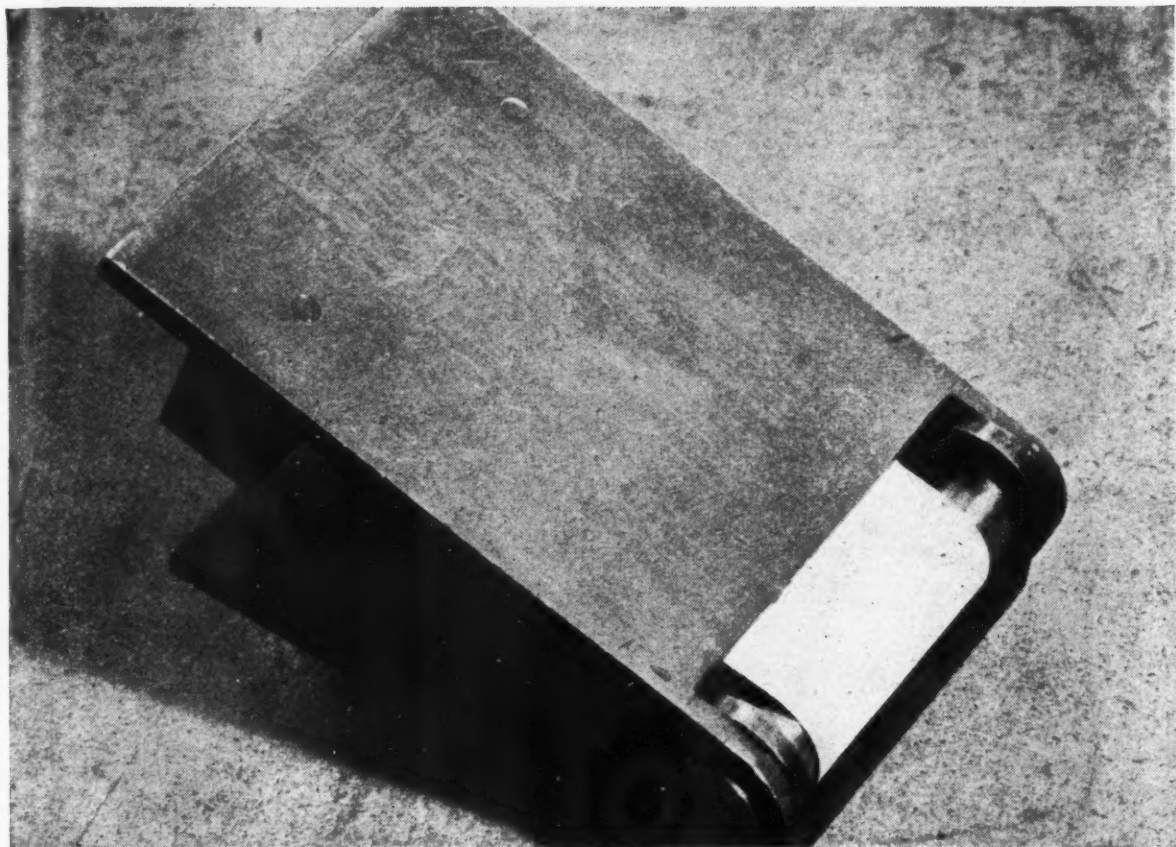


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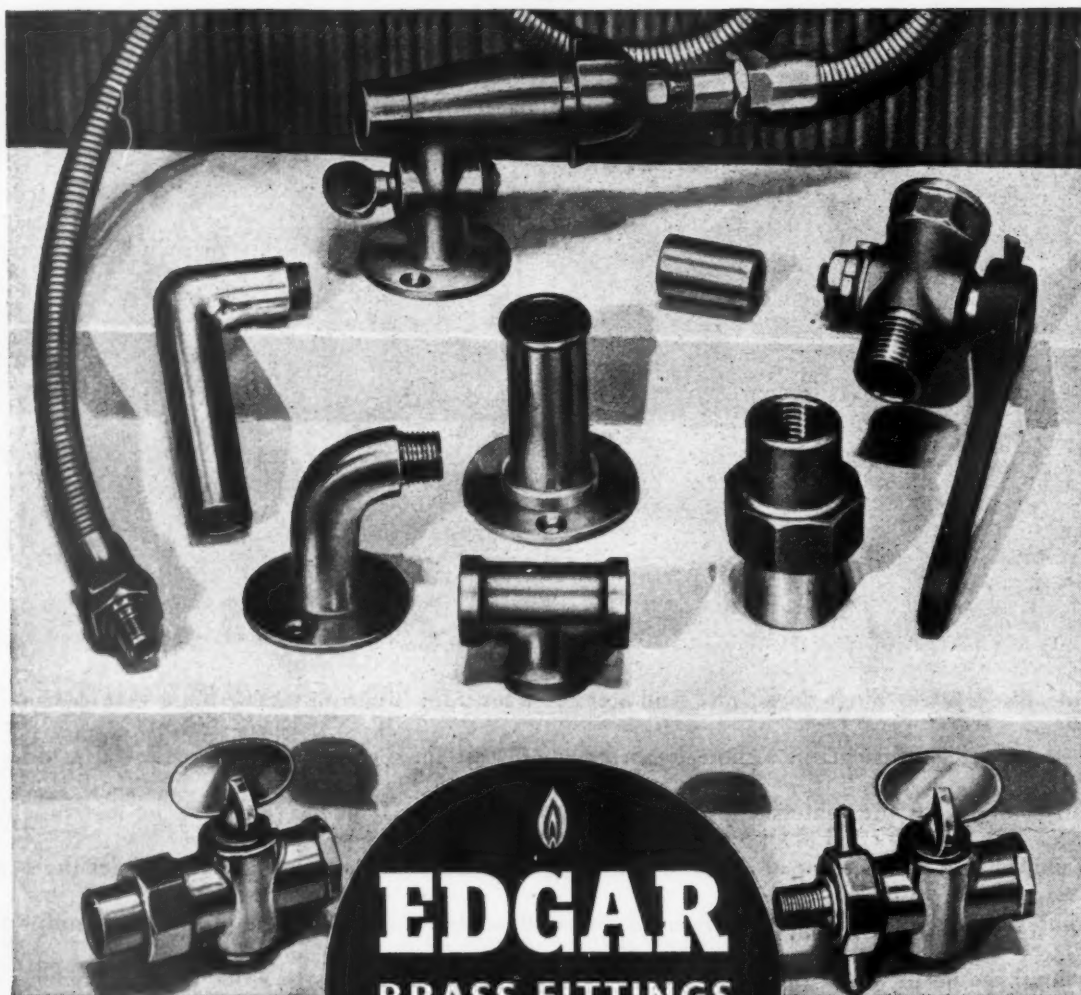
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The Bristol Channel and the Severn Estuary, by their physical character encouraged the growth of mediæval commerce; the tidal rise and fall being valuable assets to all types of shipping. The maritime and commercial development of Bristol was fostered by the Norman Kings of England. A trading community must have existed before 1188 and possibly a hundred years earlier.

Trade with Ireland was without doubt one of the earliest contacts of the port and remained throughout the middle ages of great importance. From the Irish ports of Waterford, Cork, Kinsale, Limerick, Galway and Sligo came fish, hides, skins of wild animals, horses, timber, flax and linen. Return cargoes of salt, iron, wine, leather and cloth were taken from Bristol.

Bristol became a staple town in 1353 and the second port in the kingdom, doing a vast trade in wines from Gascony and Brittany in addition to her Irish commerce.

The trade routes of the Bristol Merchants fringed the great Atlantic and inevitably their eyes and thoughts were turned towards the ocean. Merchant Venturers had already financed one ill favoured expedition in search of the "Islande of Brasylle" at the time when the Venetian seaman John Cabot came to make his home in Bristol so that he might seek support from the Venturers for

exploration of the Western seas. Cabot led several Bristol financed expeditions, but success came when Henry VII granted him a patent "to seek out and discover 'in Bristol ships manned by Bristol men,' whatever isles, countries, regions or provinces, which before that time had been unknown to all Christians."

It was primarily a voyage of discovery and not a trading venture, though the shrewd Bristol Merchants undoubtedly had future trade in mind. Sailing with the North Star on his starboard beam, Cabot struck the "New Found Land" four hundred leagues from England.

In subsequent voyages with his son Sebastian, he discovered and opened up the Northern seaboard of America. It was a forbidding and unpromising land with none of the gold of the colourful Central America, nor the silks and spices of the Indies.

The Merchant Venturers were at first bitterly disappointed, but it soon became apparent that a rich and profitable trade could be developed in the great cod-fishing grounds around the otherwise infertile Newfoundland coast.

The vision, enterprise and resource of the Bristol Merchant Venturers was amply justified.



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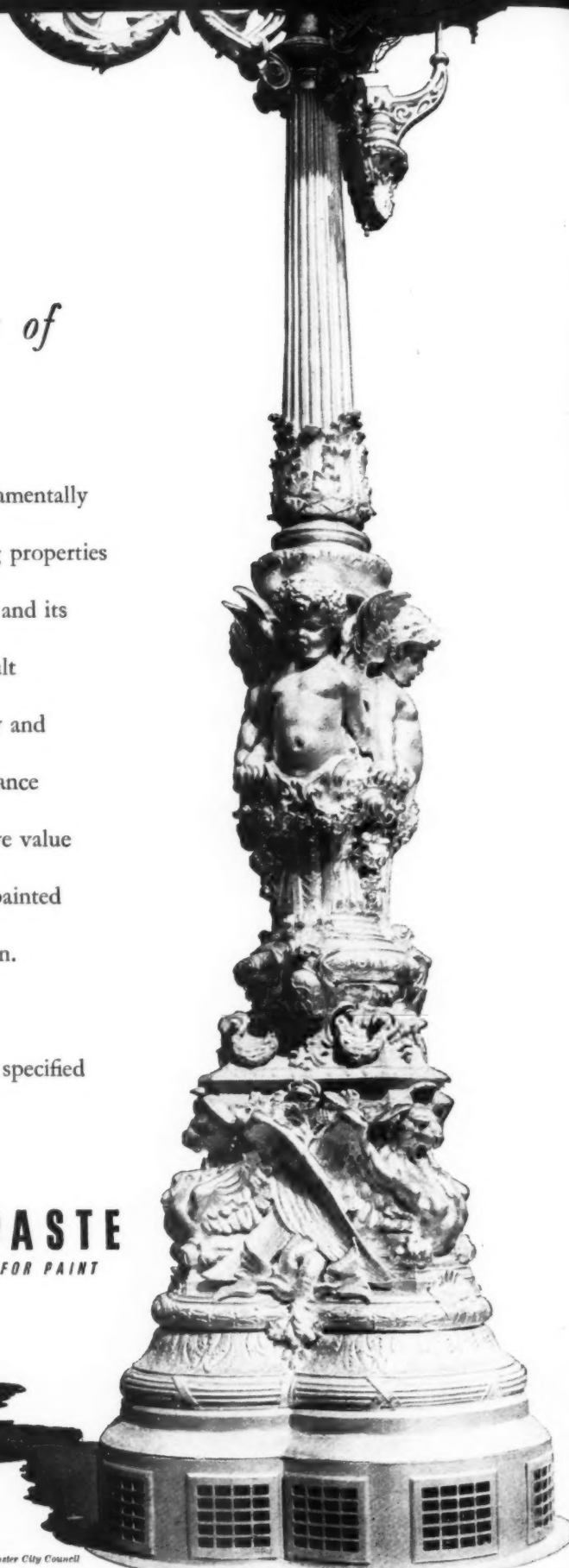
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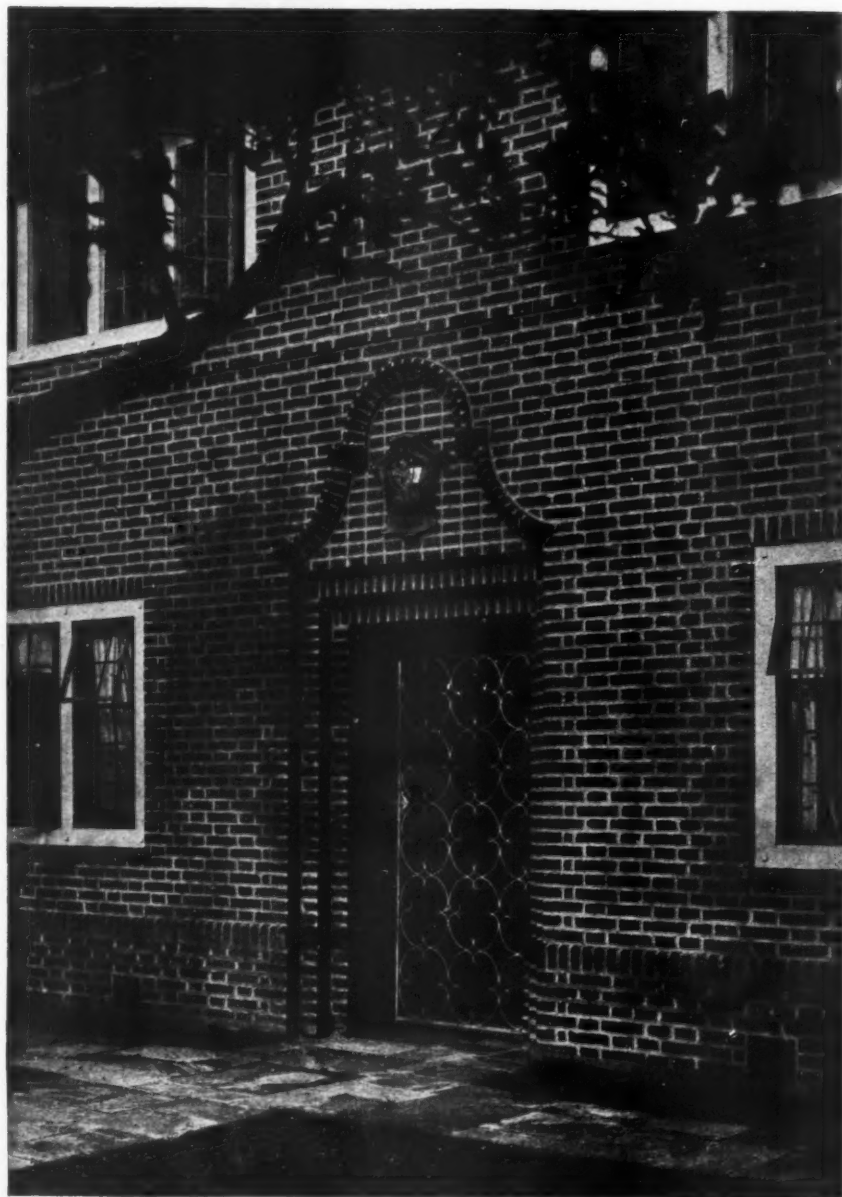
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AND THE FUTURE.... IN

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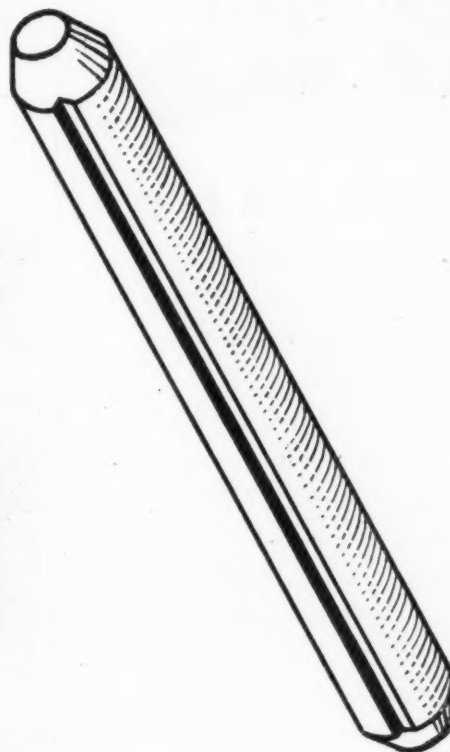
If the door is constructed of softwood—the dowel should be softwood. If the door is hardwood—the dowel should be hardwood. Swelling and shrinkage are thus equalised. The result is a permanent tight joint,

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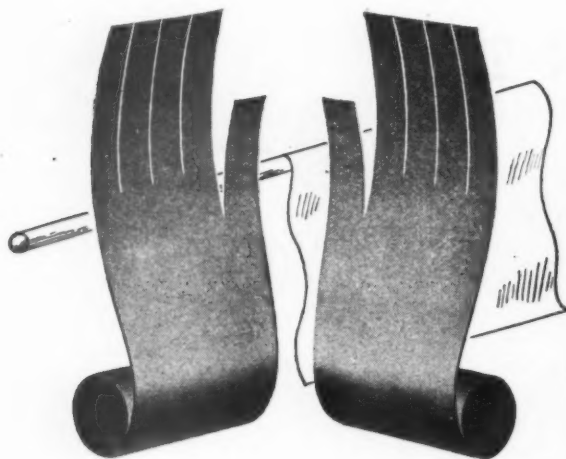


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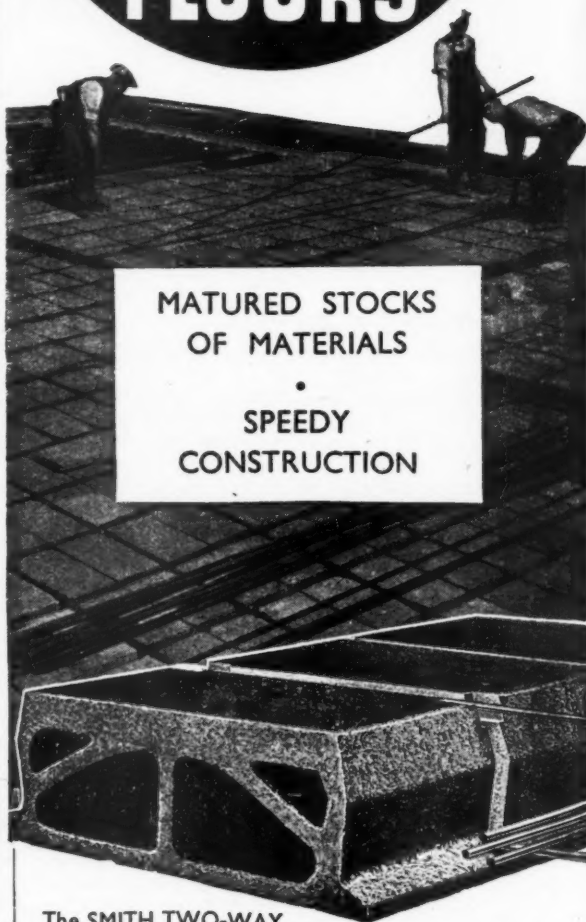
What we *do* want to do is (a) to keep your memory fresh about the exceptional merits of IBECO, because one day we hope to supply you; and (b) to tell you that even now, amid restrictions and shortages, we'll be glad to study your needs if you have a good case for using IBECO. We never stop hunting for "ways and means".



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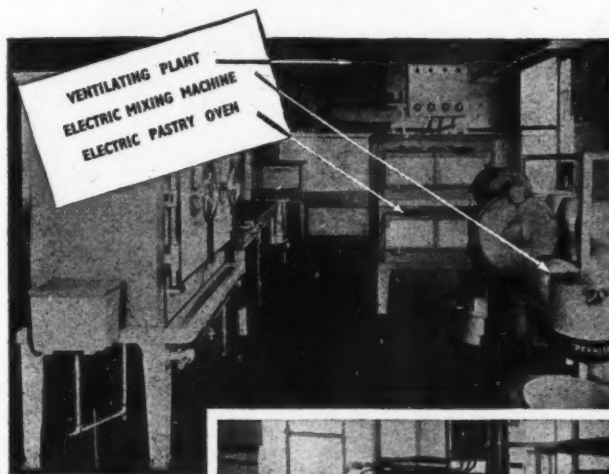
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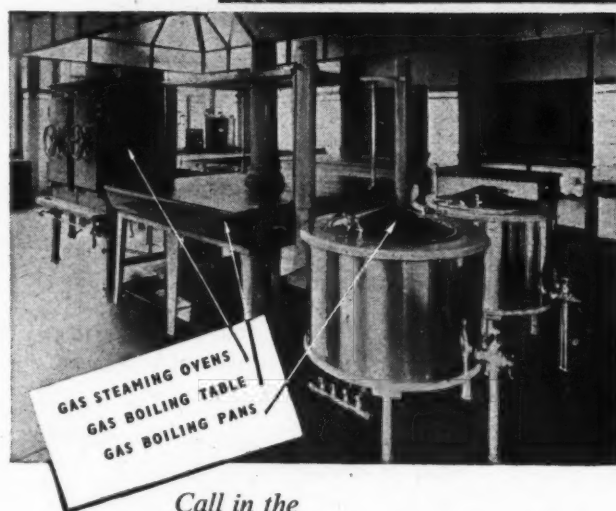
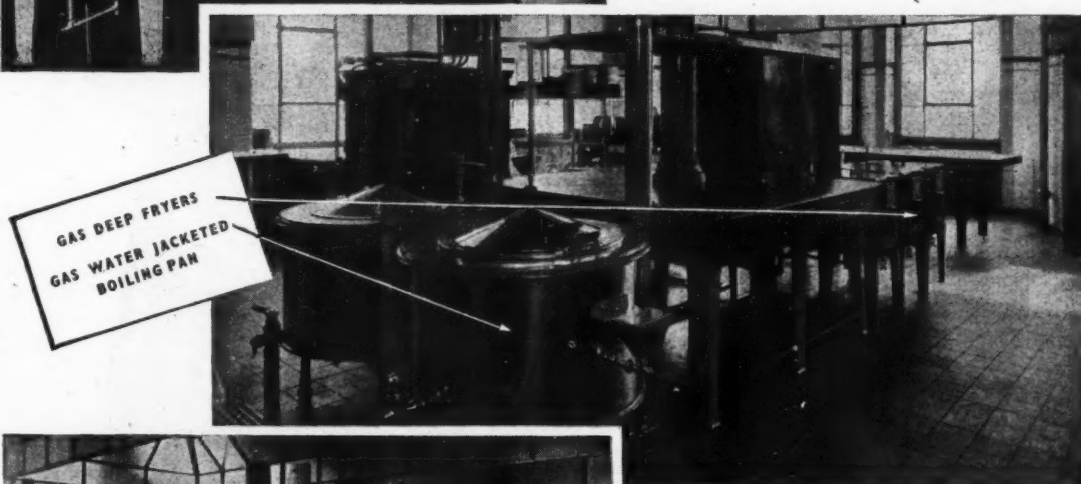
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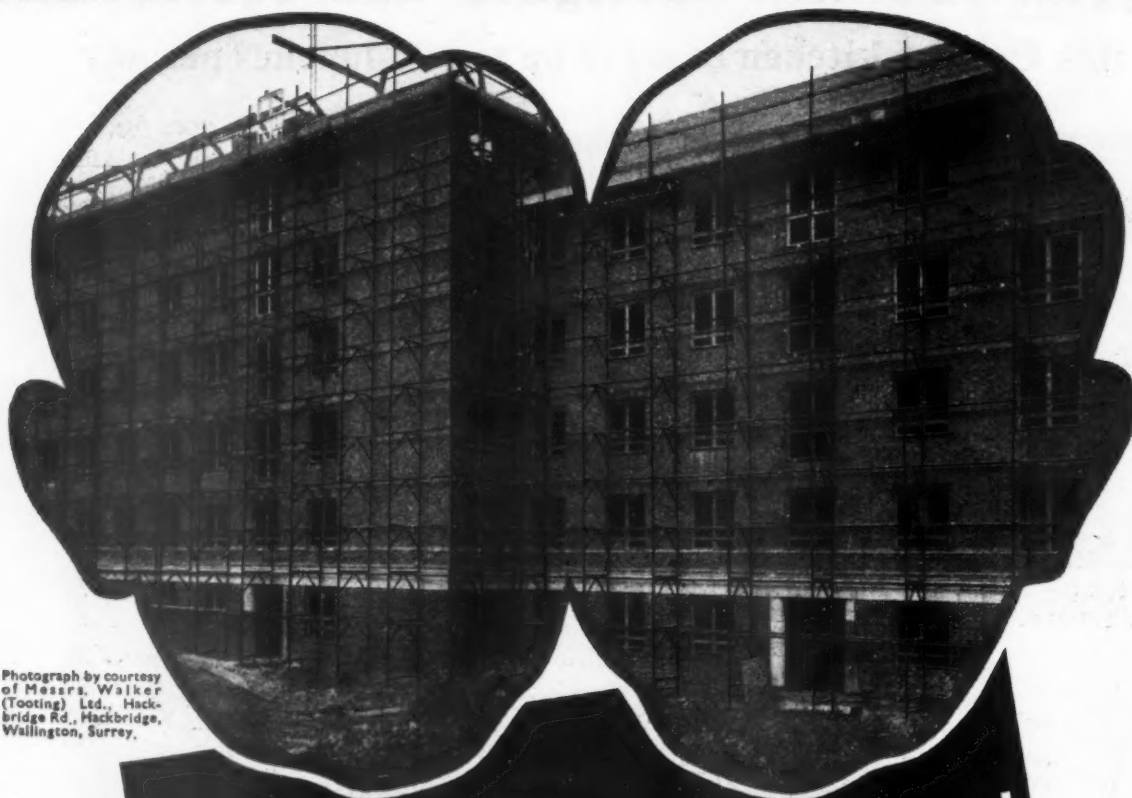
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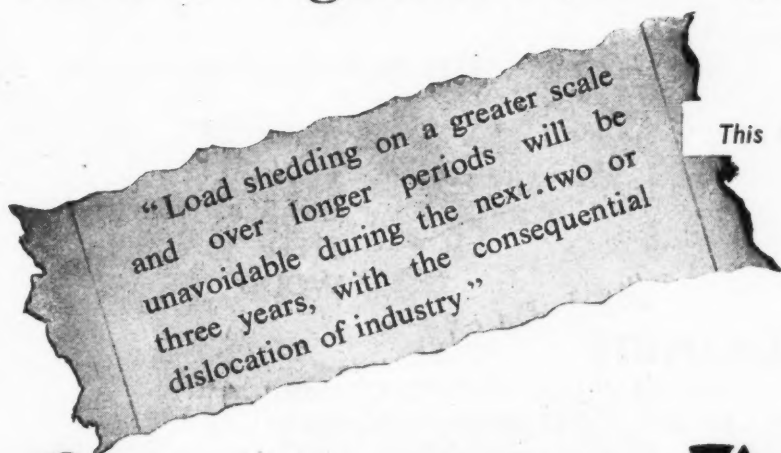
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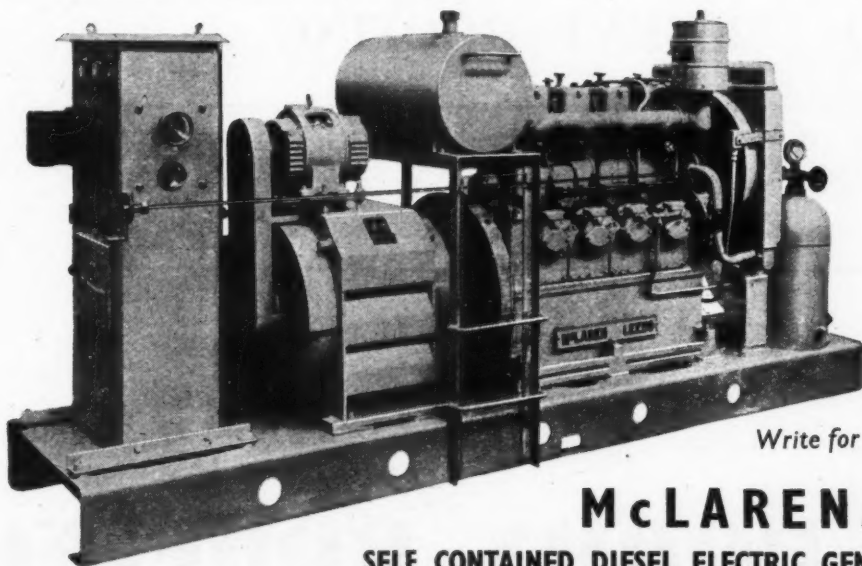


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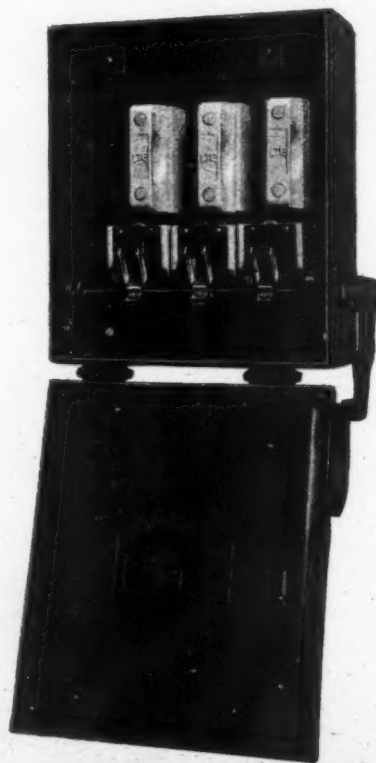
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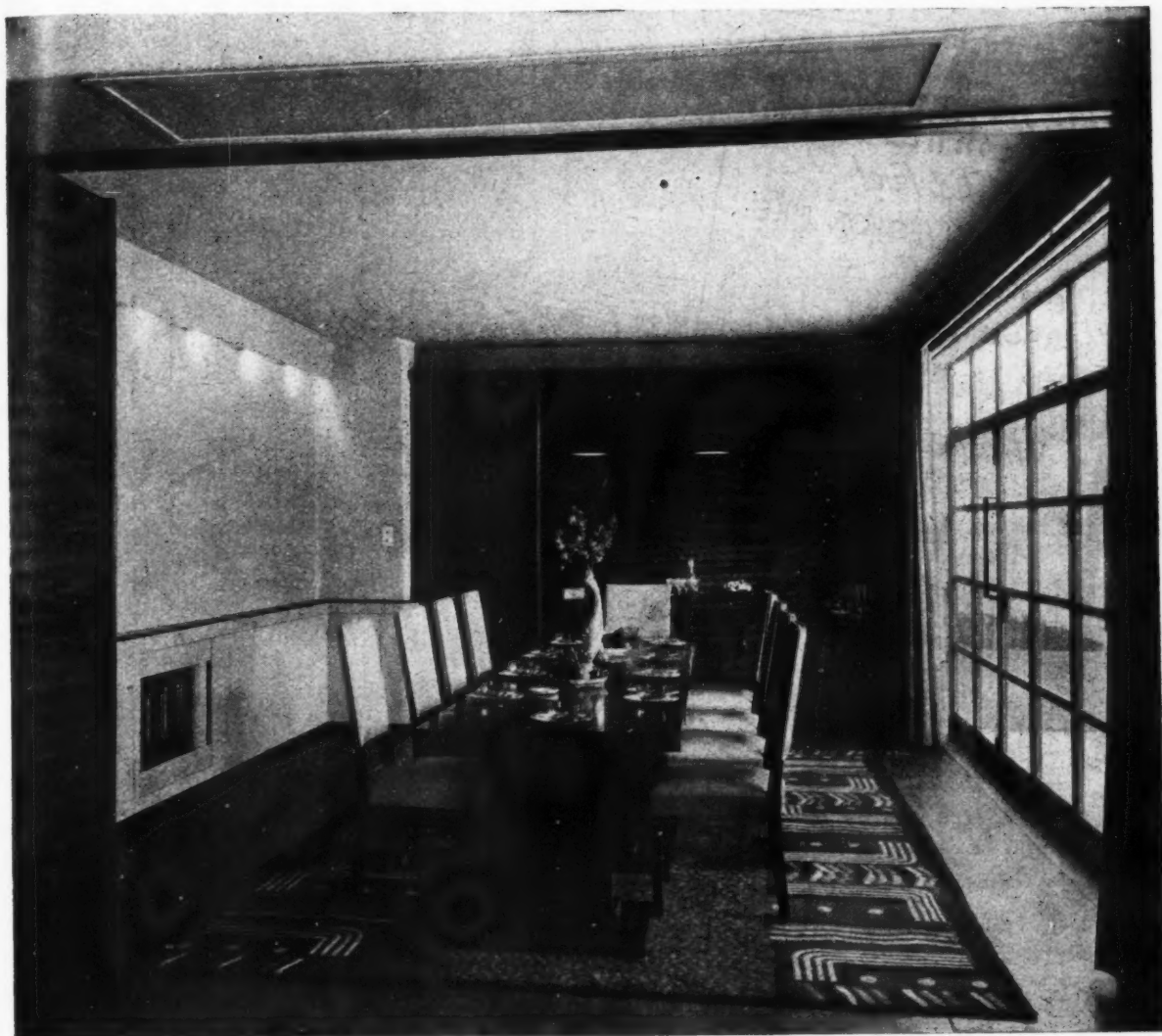
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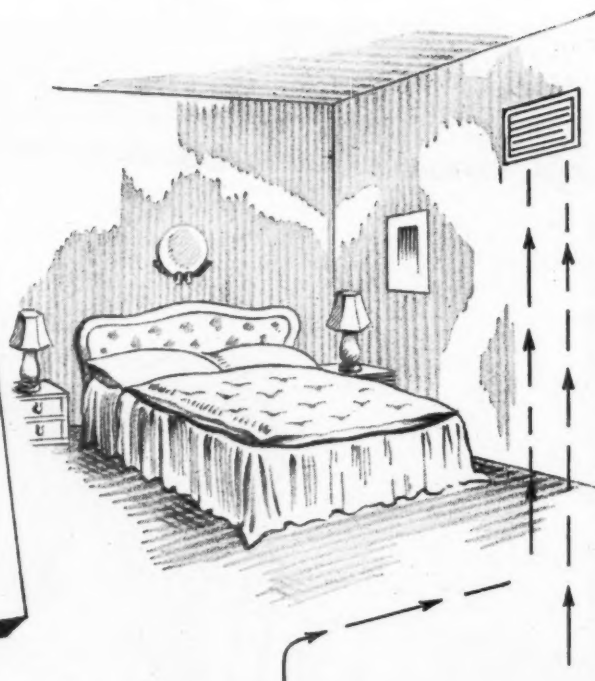
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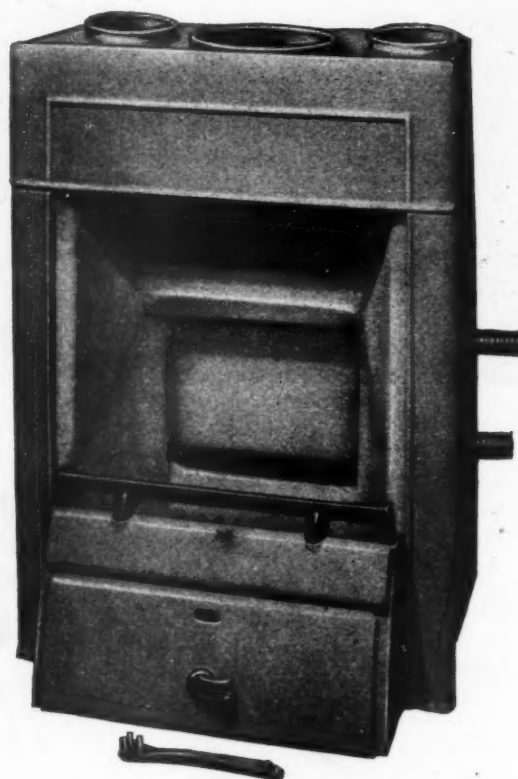
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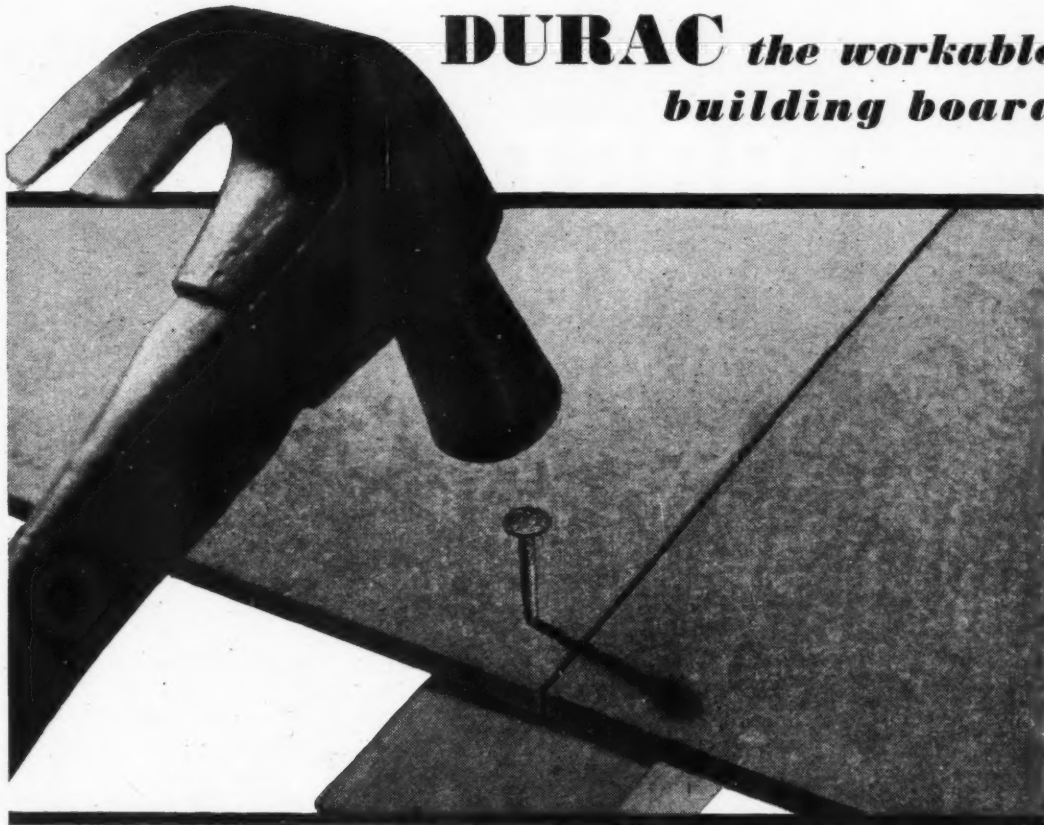
There is a single-cased CHEVIN Convector Fire (which also incorporates the Chev'n Smokeless Fuel Grate) for heating the room in which it is installed. Both models are described in our leaflet 12/48. May we send you a copy?



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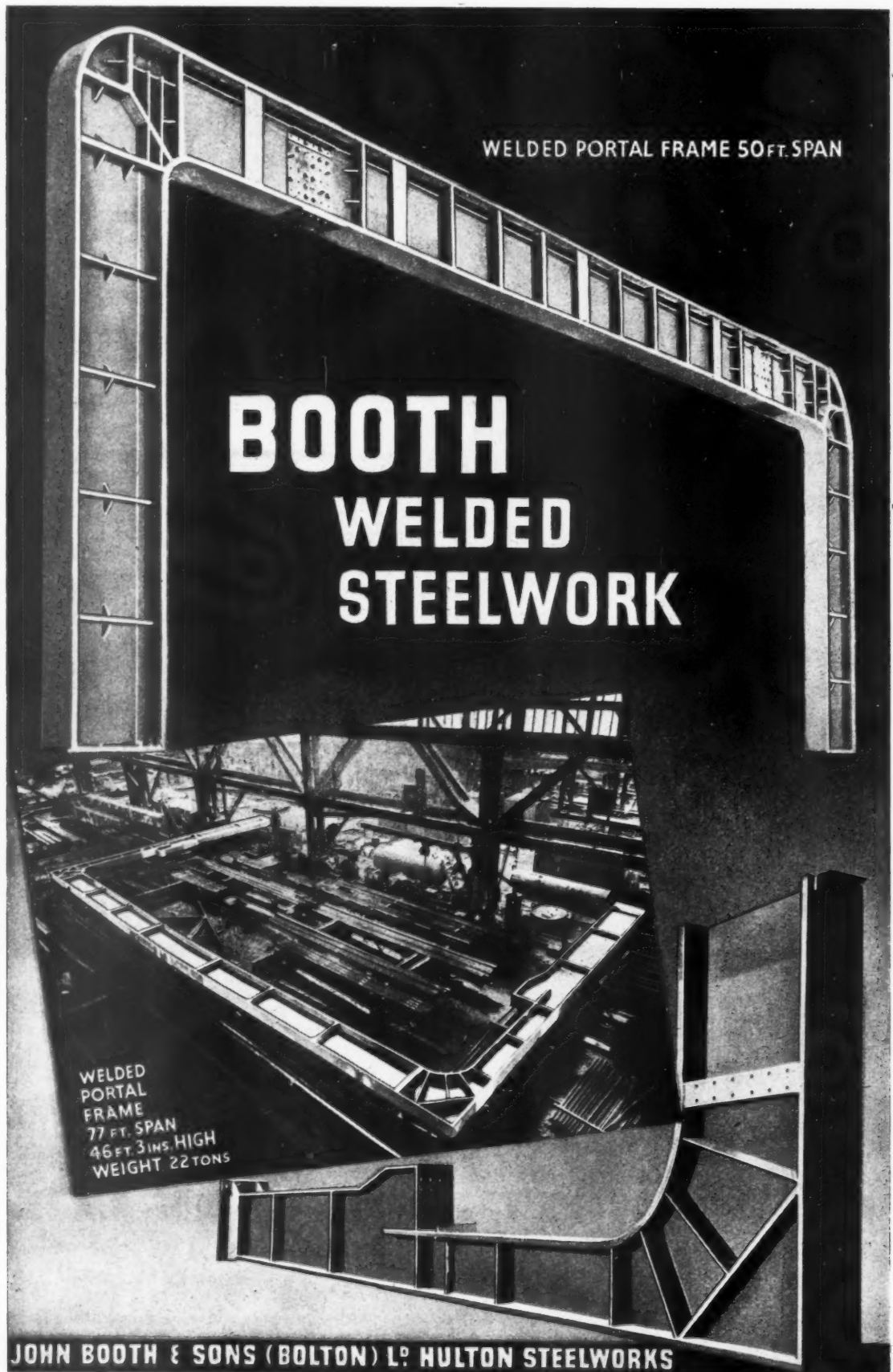
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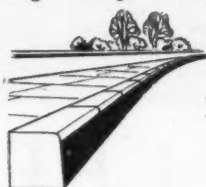
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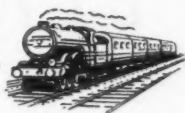
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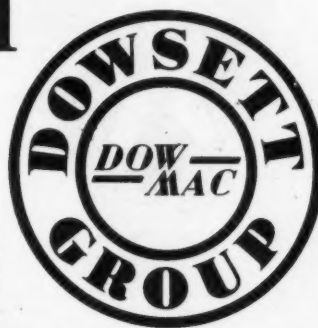
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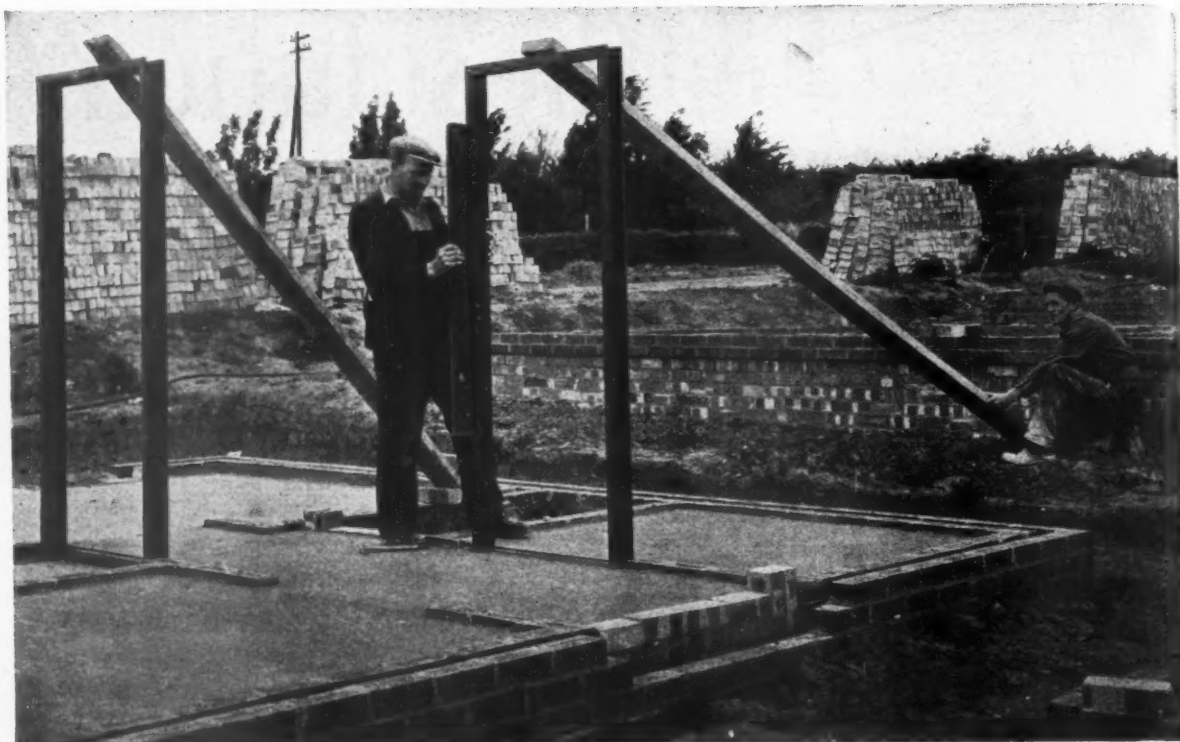


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DIARY FOR DECEMBER JANUARY AND FEBRUARY

Titles of exhibitions, lectures and papers are printed in italics. In the case of papers and lectures the authors' names come first. Sponsors are represented by the initials given in the glossary of abbreviations on the front cover.

LONDON. *Danish Art Exhibition.* At the Victoria and Albert Museum, S.W.7. (Sponsor, Victoria and Albert Museum.)

UNTIL JAN. 2

Exhibition: Home Making Today. At the Geffrye Museum, Kingsland Road, E.2. (Sponsor, British Institute of Adult Education.)

UNTIL DEC. 4

Display of Housing and Planning Books. At the Housing Centre, 13, Suffolk Street, S.W.1. (Sponsor, HC.)

UNTIL DEC. 8

National Federation of Housing Societies: Arts and Crafts Exhibition. At the Housing Centre, 13, Suffolk Street, S.W.1. (Sponsor, HC.)

UNTIL DEC. 18

150 Years of Lithography Exhibition. At the Victoria and Albert Museum, South Kensington.

UNTIL DEC. 31

Building Good Houses Exhibition. At the Science Museum, South Kensington. (Sponsor, BRS.)

UNTIL DEC. 31

A Series of Papers on Industrial Design. M. Hartland Thomas. *Industrial Design and the Engineering Industries.* Dec. 15. Milner Gray. *The Industrial Designer and Consumer Goods.* Jan. 19. Gordon Russell. *The Industrial Designer's Responsibility.* Feb. 2. Robin Darwin. *The Training of the Industrial Designer.* Feb. 16. John Gloag. *British Industrial Design and World Markets.* March 2. At the RSA, John Adam Street, W.C.2. (Sponsor, RSA.) All meetings begin at 2.30 p.m.

Misha Black. *The Way Ahead in Exhibition Design.* At the Small Conway Hall, Red Lion Square, W.C.1. (Sponsor, Sign and Display TU.) 7 p.m.

DEC. 6

Alderman A. T. Pike. *Church Army Housing.* At the Housing Centre, 13, Suffolk Street, S.W.1. (Sponsor, HC.) Lunch, 12.45-1.15 p.m., 2s. 6d. Lecture, 1.15-2.15 p.m., 6d.

DEC. 7

Richard Eve. *Full-Scale Trials on House Heating Systems.* At the RIBA, 66, Portland Place, W.1. The paper will be illustrated by lantern slides and films. (Sponsor, ASB.) 6 p.m.

DEC. 7

S. Kennedy. *Premises for the Operation and Maintenance of Public Service Vehicles.* Henry Spurrier Memorial Lecture. At the Jarvis Hall, RIBA, 66, Portland Place, W.1. (Sponsor, Institute of Transport.) 5.30 p.m.

DEC. 9

R. Nicholas. *The Validity of Building Density and other Theoretical Standards.* At Caxton Hall, S.W.1. (Sponsor, TPL) 5.30 p.m.

DEC. 9

P. W. Macfarlane. *Regional Planning Problems of the North East Coast.* At the Housing Centre, 13, Suffolk Street, S.W.1. (Sponsor, HC.) Lunch, 12.45-1.15 p.m., 2s. 6d. Lecture, 1.15-2.15 p.m., 6d. DEC. 14

Exhibition: 40,000 Years of Modern Art. At the Academy Hall, Oxford Street, W.1. (Sponsor, Institute of Contemporary Art.)

FROM DEC. 21

Ian Bowen. *Cost of House Building.* At the Housing Centre, 13, Suffolk Street, S.W.1. (Sponsor, HC.) Lunch, 12.45-1.15 p.m., 2s. 6d. Lecture, 1.15-2.15 p.m., 6d.

DEC. 21

International Architectural Students' Congress. At the RIBA, 66, Portland Place, S.W.1. (Sponsor, Arch SA.)

JAN. 1-8

Engineering Equipment and Materials Exhibition. At the Old Horticultural Hall, Vincent Square, S.W.1. (Sponsor, "Britain's Best" Exhibition.)

JAN. 26 TO FEB. 9

Professor W. G. Holford. *Design in City Centres.* At Caxton Hall, S.W.1. (Sponsor, TPL.) 5.30 p.m.

FEB. 3

Ideal Home Exhibition. At Olympia. (Sponsor, The Daily Mail.)

MAR. 1-26

The Architect's Place in our Education. At the AA, 34/6, Bedford Square, W.C.1. Joint members and students' evening. (Sponsor, AA.) 7.45 p.m.

MAR. 2

E. Prentice Mawson. *Design of Parks and Public Gardens.* At Caxton Hall, S.W.1. (Sponsor, TPL.) 5.30 p.m.

MAR. 3

S. Rowland Pierce. *The Architect and Planning.* At the AA, 34/6, Bedford Square, W.C.1. (Sponsor, AA.) 7.45 p.m.

MAR. 23

MANCHESTER. *Timber as an Engineering Material.* Post Advanced lectures in Building and Civil Engineering. F. D. Silvester. *Selection and Grading of Timber.* Dec. 15. P. O. Reece. *Loads, Designs and Stresses.* Jan. 6: R. T. Walters. *Structural Design.* Jan. 26: F. D. Silvester. *Connections.* Feb. 9: P. O. Reece. *Plywood.* Feb. 23: B. Alwyn Jay. *Posts and Preservation.* March 9: P. O. Reece. *Comparative Efficiency of Timber in Relation to Other Materials.* March 23. At the College of Technology, Manchester. (Sponsors, TDA in collaboration with the Regional Advisory Council for Technical Education.)

UNTIL MAR., 1949

SIA Exhibition of Designs and Textiles. At the Cotton Board, York Street, Manchester. (Sponsor, The Cotton Board.)

UNTIL DEC. 11

NEWS

THURSDAY,
No. 2808

December 2, 1948
Vol. 108

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Though no feature in the JOURNAL is without value for someone, there are often good reasons why certain news calls for special emphasis.

★ means spare a second for this, it will probably be worth it.

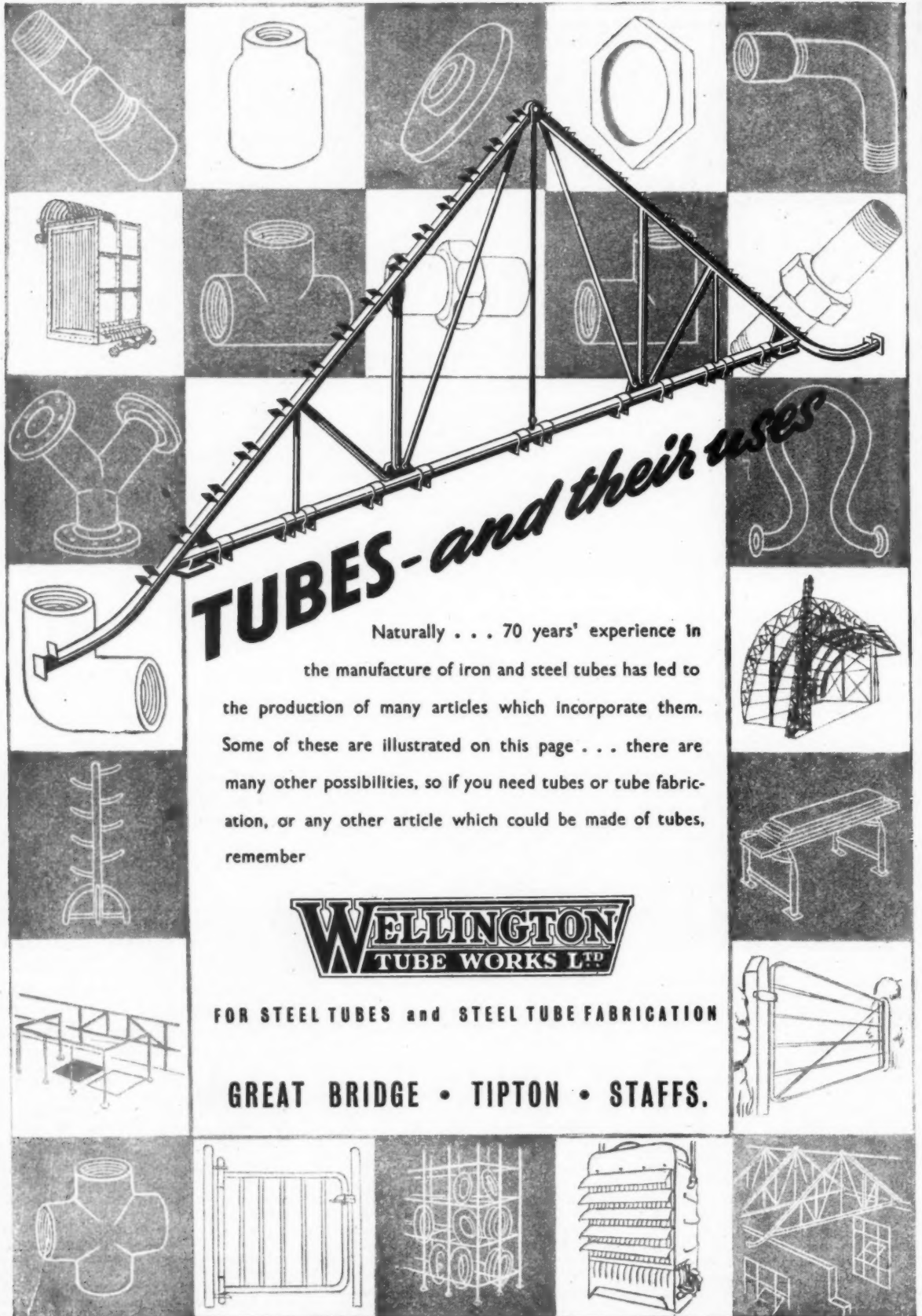
★★ means important news, for reasons which may or may not be obvious.

Any feature marked with more than two stars is very big building news indeed.

The Housing Centre's Special Committee working on HOUSING IN THE STONE DISTRICTS has submitted a memorandum to the Ministers of Health and Town and Country Planning.


The memorandum urges the Government to take the following action:—(i) The provision of an additional subsidy to cover the extra cost of building in stone in certain areas. (ii) Officially sponsored research into the possibilities of reducing the costs of stone buildings. (iii) The encouragement of quarry owners to re-open their quarries by providing the prospect of a continuous demand for stone for building. (iv) Greater official encouragement to apprentice and training schemes.

In order to give more publicity to the matter and to enable local authorities and architects working in different areas to exchange experience, the Committee is arranging a small Exhibition at the Centre of post-war house building in stone in England, Wales and Scotland. This Exhibition will be opened with a One-day Conference, at which the Minister of Health has agreed to speak, on Monday, January 17, 1949.



TUBES - and their uses

Naturally . . . 70 years' experience in the manufacture of iron and steel tubes has led to the production of many articles which incorporate them. Some of these are illustrated on this page . . . there are many other possibilities, so if you need tubes or tube fabrication, or any other article which could be made of tubes, remember



WELLINGTON
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From AN ARCHITECT'S Commonplace Book

CAST IRON IN RAILWAY ARCHITECTURE. [From A History of Cast Iron in Architecture, by John Gloag and Derek Bridgwater (Allen & Unwin).] Apart from the extensive use of cast iron for the early permanent ways and bridges that carried the new rail traffic, the material was used extensively for a variety of new architectural requirements: stations, protective railings, signal cabins, foot-bridges, and such things as signs, lamp-posts and drinking fountains. George Stephenson had devised a new form of cast iron rail for permanent ways. These rails had overlapping joints and improved cast iron chairs to carry the junctions. During the period of early railway development, George Stephenson and his son Robert planned and carried through an immense programme of work. The Liverpool to Manchester railway was an amazing feat of engineering, involving a tunnel 2,200 yards long, through a rock at Liverpool, a cutting about two miles in length and in places 100 ft. deep, driven through solid sandstone, the crossing of Chat Moss, a huge peat bog, the construction of sixty-three bridges under or over the railway, and the building of one viaduct. Stephenson found it impossible to use the normal arch construction for many of the bridges, because the railway had to be kept level. "In such cases he employed simple cast iron beams," writes Samuel Smiles, "by which he safely bridged gaps of moderate width, economising headway, and introducing the use of a new material of the greatest possible value to the railway engineer."

The West Sussex County Council proposes to submit to the Minister of Town and Country Planning an extract from its DEVELOPMENT PLANS.

The 1947 Planning Act permits this procedure in order that extracts from the comprehensive development plan may be approved in advance. The Council seeks permission to re-develop the "bungalow town" on Shoreham and Lancing beaches. The area comprises a tongue of land almost surrounded by water. The river Adur forms the northern boundary, while on the south side there are shingle beaches facing the Channel. The council tried to deal with re-development here by introducing a private Bill in 1946. This was rejected, but the 1947 Planning Act confers the necessary powers. The present proposals have been modified in that the council no longer seeks to acquire 300 existing dwellings but is prepared to fit them in the development plan for the whole areas. The plan provides for about 1,000 houses on the new estate, together with hotels, public houses, a community centre, schools and shops. The principle of rebuilding the existing church, which is badly sited, and the vicarage and church hall, which were both destroyed, has been agreed between the council and the diocesan authorities. It is intended that the estate should be mainly residential with accommodation for holiday visitors in hotels and boarding houses.

servation of materials and to alternative forms of construction. Work for post-war reconstruction began in late 1940 but, owing to the pressure of urgent war-work it was not possible to make much progress until 1943. In addition the Station was called on to deal with problems which were outside the field of building research, but for which the Station's experience or equipment were of special value.

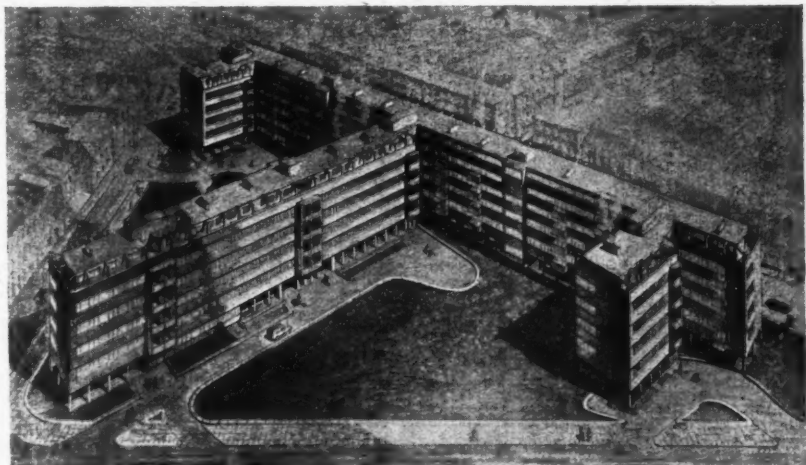
The report of the Director gives an account of the work in 1945 on building materials, methods of construction and the efficiency of buildings. As the need for full-scale trials of ideas arising from laboratory work became evident, a programme of construction of houses was inaugurated. The first part of the programme was the construction of eight small houses incorporating different degrees of thermal insulation, so that their fuel requirements for heating could be studied. The results obtained from the experiments with these houses have since been published in the *RIBA Journal* for January, 1947, and October, 1947.

THREE AUSTRIAN OFFICIALS, responsible for bomb-damage repair and housing in Austria, have visited London.

The visit was under the auspices of the British Council and the Austrian Government and had the object of showing how London's building reconstruction and housing plans are progressing and to study the system of distribution of building materials. The visitors were: Sektionschef Dr. Arthur Fuchs, head of the Housing and Welfare Section of the Ministry of Social Administration; Herr Stadtbau-Direktor Dipl. Ing. Gundacker, chief of the Municipal Building Office, Vienna; and Herr Sektionschef Dipl. Ing. Rudolf Kloss, head of Section 111, Ministry of Trade and Reconstruction. The building departments of the London County Council were inspected, and a visit made to the Woodbury Down Block Dwelling estate at Stoke Newington, which is partly completed.

★ DSIR has published its report on war-time activities in BUILDING RESEARCH.

The Annual Reports of the Building Research Board and of the Director of Building Research had to be discontinued during the war, and owing to the pressure of work at the conclusion of the war there has been further delay in presenting the reports. The whole period 1940 to 1945 is now covered in "Building Research 1940-45." The Report is in two parts, the Report of the Building Research Board for the whole period and the Report of the Director giving a summary of the work done at the Station in 1945 and a review of war-time research. The Building Research Station worked at pressure throughout the period, although the type of work undertaken passed through several phases. In the early days of the war the bulk of the special problems dealt with were related to civil defence, to the con-



An exhibition called "Poplar Builds" is now open at Poplar Central Library. The photograph above shows a design for a six-storey block of flats at Abbott Road that is on view at the exhibition. Work was begun at the end of 1945 after research had been initiated to find an alternative to brick construction. The building has a structural steel frame made up of standard rolled sections clad externally with precast concrete panel units. The cladding, hung by specially devised fixings on horizontal steel angle members, is erected entirely from the inside. This construction dispenses with the need for scaffolding and reduces temporary formwork to a minimum. The work is under the direction of Mr. W. J. Rankin, Borough Engineer and Surveyor; Mr. C. H. Weed is the principal assistant architect.



The LCC's Biggest Housing Scheme

The LCC is planning a housing estate for 21,000 people in the area fringing Putney Heath and Wimbledon Common. In the two views of the model, above, the white lines outline some of the fourteen different sites comprising the scheme, the total area of which is 305 acres. Most of it consists of the grounds of large houses,

some of them derelict. Those of architectural interest, including the eighteenth-century Downshire House (by Brettingham) and Mount Clare, will be preserved for educational purposes. The scheme includes schools, nursery schools, shops, public-houses, a health centre and a library. See Astragal's comments on page 505.

★
A proposal has been made that Bristol Corporation should set up a **DIRECT BUILDING DEPARTMENT**.

The proposal was made by Alderman F. A. Parish, leader of the Labour group, at a meeting of the City Council. The Architectural Committee has asked that £12,400 worth of architectural work, on certain projects of the Education Committee, should be done by private architects.

The work relates to the erection of Stoke Bishop and Broomhill Primary Schools, and additional provision for technical education, and the committee say they have "reluctantly reached this conclusion because of the difficult circumstances in which the department is placed."

"Since the war, the work of the City Architect's dept. has increased enormously, and it has been almost impossible to recruit the necessary architectural staff. Technical establishment is 70 posts, of which only 52 are filled, and though in the past year 13 new appointments have been made, 11 members have resigned to take up other appointments."

In January, 1938, the Council agreed that after the appointment of the City Architect, no other architect should be employed on any scheme, unless they gave consent. It is estimated there has been a saving of £20,000 in fees. The average departmental charge is estimated to be 0.53 per cent. a year, compared with 0.77 if done by outside architects.

HOUSE HEATING

OVER the last few years great interest has been shown in the subject of house heating. Prompted in the first place by the Post-War Study Committee Report and the Simon Report on Domestic Fuel Policy both architects and manufacturers have shown a desire to achieve something better than pre-war standards. The public, too, have begun to be interested in the subject, partly as a result of exhibitions and general propaganda and partly because of the special emphasis laid upon fuel economy by the national situation.

This activity has resulted in three rather differing problems for architects. The first is the need to design better insulated houses, the second is to decide upon standards and types of heating and the third is to pick a satisfactory appliance for the chosen system. There is now reasonably good information on methods of achieving insulation, but the other two aspects of the problem are still the subject of considerable discussion and doubt in the minds of many designers. The second problem, that of choosing an appropriate standard and system of heating is one which can only be properly decided on evidence based on the comparison of full scale trials of the different methods. Such trials can only be successful if carried out on a large scale and under most carefully controlled conditions. This was clearly a major task requiring Government direction and has appropriately been undertaken by the Building Research Station.

The BRS built twenty houses, of two plan types, but otherwise similar. In these they installed nineteen different house heating and hot water systems. These were used under carefully controlled conditions without tenants for one heating season and are now being observed with tenants in occupation. A great mass of data is being obtained from this important piece of research and the full results will not be available for some considerable time. However, there is already a good deal of useful information available and the first major paper giving some of the results appeared in the RIBA Journal for November. We understand that further papers are likely to appear from time to time both in the RIBA Journal and elsewhere. Clearly it will be useful to have as a background to these papers, which are likely to be devoted mainly to giving results of the trials, some general description of the houses and their heating appliances. The Technical Section of this issue of the JOURNAL is therefore devoted to such a general description. In further issues it is hoped to illustrate certain details of construction which are specially related to heating. In this way the technical data on efficiency of systems and appliances, which properly form the subject for major papers in the Journals of learned Societies, may be more closely related to the detailed problems which arise on the drawing board. In particular it is hoped that the description of the houses given in this issue may be of value to those who propose to attend the Architectural Science Board lecture on December 7, when Mr. Richard Eve, an architect from the



A drawing was published in the JOURNAL for July 1 of the projected aluminium bridge at Alvida, Quebec, which was expected to be the first all-aluminium bridge to be completed in the world. The Canadians have now found themselves forestalled by the opening last week, by the Minister of Transport, of the new aluminium alloy bascule bridge at Sunderland. The photograph above shows part of the bridge under construction. Built as part of the Port of Sunderland Improvement Programme it spans the junction between the Hudson and Hendon Docks. Mr. W. H. S. Tripp, Engineer to the River Wear Commissioners, was responsible for the detailed design and execution of the work, and the superstructure was designed by Mr. F. J. Walker, Chief Civil Engineer of Head, Wrightson & Co. Ltd., who built the bridge.

BRS, will be giving some of the results of the experiment which are now available.

This long-term enterprise in field research will produce most valuable results and is a typical example of the way in which the resources of the BRS ought constantly to be utilised. On such matters the BRS can give guidance to the building industry with an authority no other body can claim.



The Architects' Journal
9, 11 and 13, Queen Anne's Gate, Westminster S.W.1
Phone: Whitehall 0611

N O T E S & T O P I C S

OUT OF THE FOG

AA's busy, balding Gordon Brown, as the American captioners would say, produced at the meeting in Bedford Square last Wednesday week what he termed a master plan for a new educational deal for architectural students. He described it as the product of a walk in a fog, but his ideas had little of the fog in them. Continual development in its teaching outlook and practice has become a tradition with the AA school, and some vital renewal is clearly about due. Referring to the "Beaux Arts" system as a digression, Gordon Brown read extracts from the prospectus of 1896, when Lethaby and C. F. A. Voysey were on the staff. These extracts showed how relevant in some respects is the old crack about "more and more about less and less."

It was clear that the AA Principal was flying a pretty powerful kite. At breakneck speed he mentioned a host of things the AA school could and should do, from greatly lowering the fees to setting up a country school at which all students should spend one year, changing the course to provide a sixth year to include training for town planning and industrial design.

A great point was the need for permanent close collaboration with the Royal College of Art, following up the plans for initiating collaboration which I wrote about last term. Did one detect a faint feeling of envy at the £300,000 that body has recently been granted by the Ministry of Education?

A number of sly digs were made at the Council of the AA with its changing membership, at the annual change of treasurer and at the Bauhaus, all in support of the speaker's arguments in favour of more money, continuity of education policy and against the idea that architects can be taught familiarity with materials by working machines. It seemed to me that Gordon Brown was less than fair to the Bauhaus, the pupils of which achieved conspicuous success both as architects and industrial designers. Breuer was quoted as an authority for the view that as a school of architecture the Bauhaus was not a success. The fact that he was himself, unless I am mistaken, both a student and a teacher there, is one answer to this criticism.

SWORD PLAY AT THE V & A

What's going on at the V & A? Great laxity, suggests the Duke of Wellington, flashing his sword in the *Sunday Times*. Ladders left standing, windows without bars, unvigilant warders, the nation robbed. Talk, too, of revolution. So Astragal, not always jesting, went along to discover the truth.

All seemed ready for his visit—rune stone laid, bunting afloat, a blast from a curling Viking trumpet to greet his entrance (later found to be only someone practising on one of the Danish exhibits). And there in a snug office, joy for journalists, a brand-new PRO.

"The stolen swords . . . ?"

"Oh, don't talk about that. Officially, no comment. The new gallery arrangements, now; there's an interesting sub-

ject. The idea is to get the public to visit the museum."

"Couldn't you have put them in chains, or something?"

"In the past the sheer bulk of stuff got people down, so, in order to reduce Gallery Fatigue, we are showing only the Great Primary Collections on the ground floors."

"Have you put bars across . . . ?"

"The limited choice pieces will be properly and individually displayed against backgrounds of the right colours and textures and lit with corrected fluorescence. Upstairs will be the Secondary or Study Collections."

"That ladder, now. Didn't anyone . . . ?"

"We have also formed a new department called the Department of Museum Extension, which is my pigeon. My job is to project the museum to the public. I deal with public relations, act as Press Officer, look after publications, casts, lectures, and so on."

"Perhaps swords for the warders . . . ?"

"We are also building a special photographic studio and laboratory and a shop for making first-rate plaster casts. There will be a special room for temporary exhibitions. We have also instituted a fresh tea bar with modern furniture. The whole job should be ready by 1951, the gods and MOW being willing."

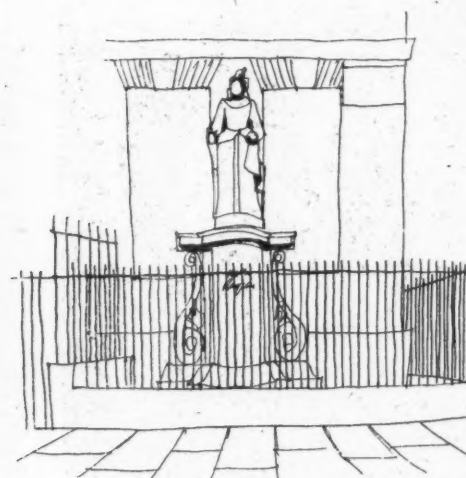
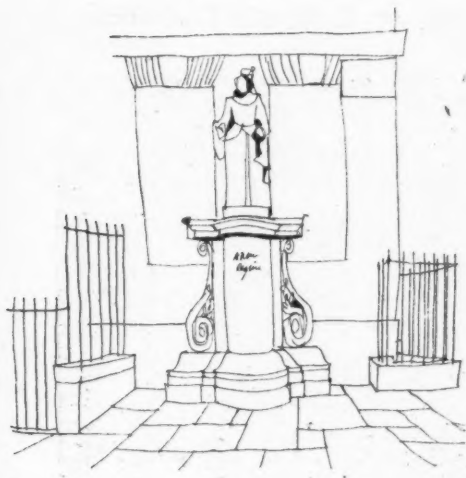
"Those swords . . ."

"Oh, can't you forget them?"

A little later Astragal did forget them, standing entranced before a triptych perfectly lit and placed in the splendid isolation it deserved in the Northern Gothic Gallery, once a gloomy confusion of wrought ironwork. No brickbats, please, but bouquets for Sir Leigh Ashton. I believe some pictures of the newly arranged galleries, which set a standard of display never achieved before at the V & A, appear elsewhere in this issue.

GUARDING QUEEN ANNE

From Victoria and Albert to Queen Anne takes one back home through more than a hundred years and three stations on the Inner Circle. There she stands, God bless her, just beside the AJ offices. She, anyhow, is to be well protected behind a rising stockade of railings, which MOW are putting up



Top left, the statue of Queen Anne after the removal of the war-time anti-blast wall, and right, the setting for the statue suggested by Astragal. Below left, Queen Anne as she appeared at the time of going to press, and right, a sketch showing the effect of replacing the pre-war railings.

and the crude detailing of the LCC's housing schemes (which fall far behind those of London Boroughs).

The model exhibited at County Hall—in so far as it is an indication of the layout intended—does nothing to allay these doubts. Uncompromising rows of parallel slabs of flats cover acre after acre of ground that clearly calls for imaginative landscaping and grouping. This is surely where the Town Planning Department of the LCC should come in, but apparently they don't. The scheme is approved by the LCC town-planners from the point of view of densities and so on in the same way that all London schemes have to be passed by the County as the town-planning authority, but it is not—as many people will feel it should be—designed by them, working as a team alongside the housing architects.

For the Housing Department to exhibit a layout which is largely a work of town-planning, and for the LCC's own town-planners to be permitted to criticize it afterwards—but only in detail, on the basis of a conception in which they have had very little share, seems to be putting the cart before the horse. It raises again the whole question of the relations between the LCC's various technical departments (I suggested things were not altogether satisfactory when it was disclosed that the Town Planning Committee had not been consulted about the Campden Hill case). Similarly, the decline in architectural standards raises anew the question whether it was wise to remove housing from the Architect's Department to the Valuer's.

ASTRAGAL

LETTERS

Sir E. Owen Williams, K.B.E.

The Future for Students

SIR.—I am glad that you have awakened to the significance of having 12,500 architectural students in training, but I am surprised that you imagine there should be any sort of enquiry other than what can be readily made on the back of an old envelope. With 12,500 students it means, as you point out, an output of 2,000 architects per annum. The average life of an architect in practice is about 35 years and, at the rate of wastage this signifies, it would require a total of 70,000 architects to take in new blood amounting to 2,000 per annum. A simple calculation either of man power in the industry or reasonable fees at 5 per

as the finishing touch to the repairs they have been slowly effecting since she emerged from her war-time brick box. I suppose they have put up the railings because there were railings there before. That is what comes of taking the repair of war damage literally. I can't help feeling it is a pity the chance hasn't been taken of giving a much better setting to one of the most charming bits of sculpture in London. My illustration shows how this might have been done.

LCC UNDER FIRE

The Putney - Roehampton housing project, which came before the LCC this week, is one of the most ambitious projects they or any other housing authority have ever handled: an area of over 300 acres, houses and flats for 21,000 people, shops, schools, a library, a health centre, on fourteen

closely related sites in one of the most salubrious parts of residential London. The LCC have shown commendable energy over the acquisition of the sites and the launching of the project.

It is unfortunate, however, that this very important enterprise should come along at a time when the standards set by LCC housing are the subject of misgiving in many quarters. This time there is no question of departure from the County of London Plan (as on Campden Hill, of which I wrote recently) or of building on land that ought to be open space. With Wimbledon Common and Richmond Park nearby, this is an ideal situation for fairly high density development. But, as a leader in Saturday's *Times* pointed out, architects and others have been increasingly worried lately by the unimaginative layouts, the poor design

NEW LAYOUT FOR THE V & A GALLERIES



The reorganization of the Victoria and Albert Museum under the direction of Sir Leigh Ashton has been steadily progressing since the opening of the Elizabethan Gallery some months ago. A further stage in the return of national treasures to public view has been achieved by the opening of two more galleries, the Italian Gothic gallery, above, and the Northern Gothic Gallery, below and left. See Astragal's comments.



cent. soon shows that 70,000 architects is an absurd impossibility incapable of being supported.

The total number of building trade operatives employed on what may be called architectural work was never more than 250,000 before the war, and assuming that architects are going to be paid not less than an ordinary labourer, it can soon be worked out that there is not room for more than 10,000 architects even with the building industry going full tilt, i.e., with a surplus of capital available which we are hardly likely to see again.

The solemn conclusion is that 90 per cent. of those now being trained must ultimately find themselves unemployed; a colossal and inexcusable waste of effort with heart breaking disappointment to those who have been misled.

London

E. OWEN WILLIAMS

In Parliament

A statement on the housing programme for Scotland for 1949 was made in the Commons by Mr. Arthur Woodburn, the Secretary of State for Scotland.

He said: "We contemplate that the building trade will maintain a completion rate of 20,000 permanent houses a year, although we feel that this might be improved upon if conditions throughout the year are favourable. In order that the maximum number of houses should be completed in the year, it is essential that the programme should be brought into balance. Strict control will, therefore, still have to be exercised over the approval of new tenders to avoid the dissipation of building labour over too many houses.

"The starting of new houses will, however, continue to be authorised for priority cases, such as agricultural workers, miners and key workers and for certain other exceptional needs."

When Mr. A. C. Bosson (Con.—Maidstone) asked how many were awaiting houses, the Secretary of State replied: "It is estimated that nearly 500,000 houses are needed for Scotland eventually, to satisfy all the various needs."

His answer brought whistles of amazement from some Members.

A Scottish Member on the Opposition front bench, Commander T. D. Galbraith (Con.—Pollok) observed grimly that Mr. Woodburn's statement would bring the gravest dissatisfaction to Scotland.

Mr. A. E. Baldwin (Con.—Leominster) asked the Minister of Health whether, in view of the shortage of houses for agricultural workers, he was prepared to waive the present restrictions on the granting of licences to persons wishing to build houses for this purpose and who were willing to make no claim for subsidy.

The Parliamentary Secretary to the Ministry of Health, Mr. John Edwards, replied, "No, sir."

Mr. Baldwin: "What reason is there for refusing a licence for the building of a house for a farm worker when there is such a shortage of rural houses, and when the builder wants no subsidy from the country and no subsidy from the ratepayers?"

Mr. Edwards: "There is no advantage in adding to the number of houses on paper unless the men and materials can be made available."

Mr. Baldwin insisted that these were available, but the Parliamentary Secretary countered with: "I am satisfied that this is much the best way in the interests of the agricultural community."

One result of the ending of control over the distribution of building materials, which came into effect on November 1, is that the Ministry of Works has been able to reduce its staff.

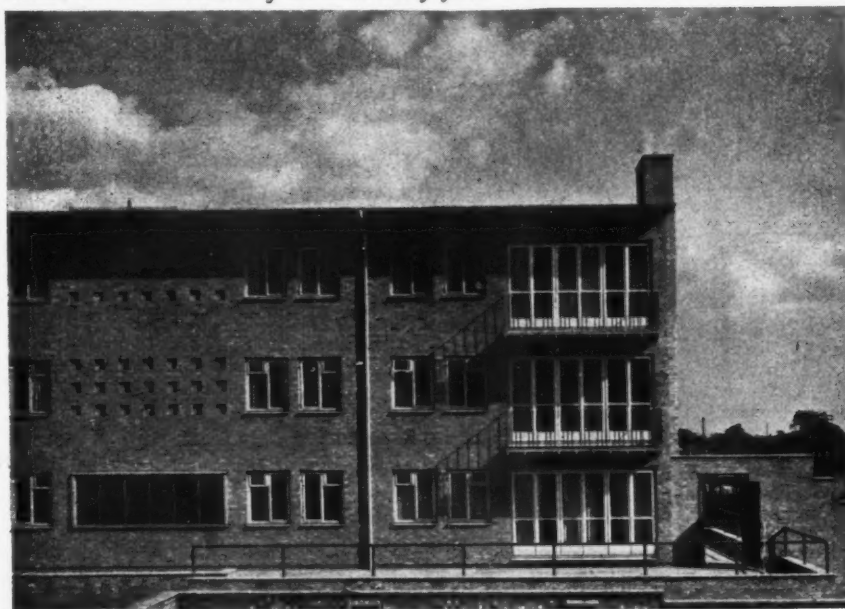


Three-storey flat block from the south.

HOUSING AT COVENTRY

BY D. E. E. GIBSON, CITY ARCHITECT

Below, the rear elevation of the three-storey flats.



GENERAL.—This scheme provides the following alternative types of accommodation: three-storey blocks of flats, three-storey housing, two-storey terrace housing and some single bedroom old people's bungalows.

SITE.—This is on the outskirts of Coventry and is almost flat and largely featureless. The site is bounded on the south by a road which separates it from a park. The layout of the buildings is in a series of squares.

FLATS

PLAN.—The flats have two or three bedrooms. All living rooms, as far as possible, are on the south side. A refuse chute is on the quarter landing for each flat; for the sake of economy bath-



The three-storey flat block from the south-west.

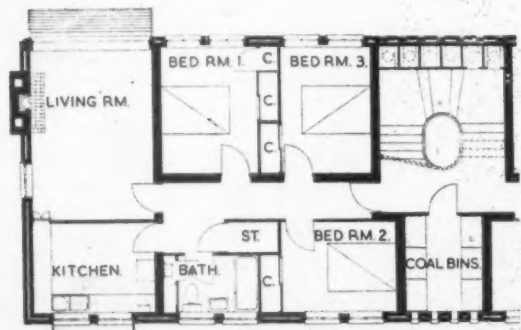
rooms and kitchens are planned side by side.

CONSTRUCTION.—The walls are 11 in. cavity; roofs are of concrete tiles with a $47\frac{1}{2}$ degree pitch; the ground floor is of $\frac{3}{4}$ in. asphalt on 4 in. concrete, the first floor of 1 in. tongued and grooved boarding. The floors are sound-proofed according to BRS recommendations. All internal walls are of $4\frac{1}{2}$ in. brick and 2 in. breeze block.

INTERNAL AND EXTERNAL FINISHES.—The interiors are painted light cream throughout. The front doors are of various colours—salmon pink, sky blue, grey, yellow and red.

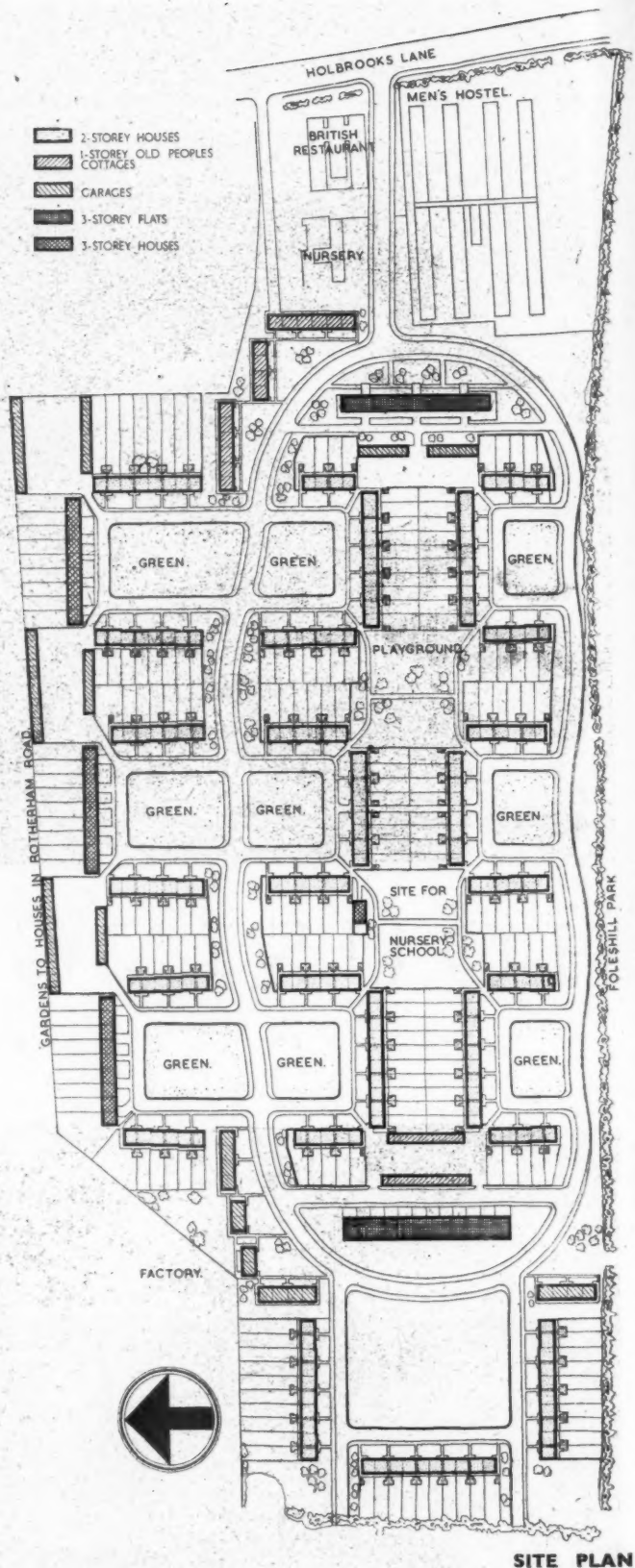
HEATING.—Hot water is provided by instantaneous gas water heaters.

For full list of general and sub-contractors see page 520.



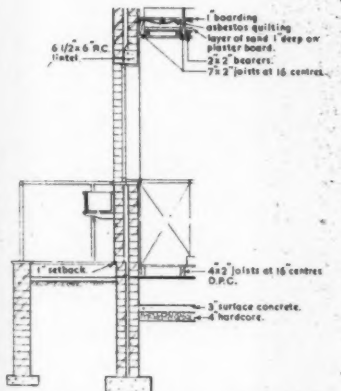
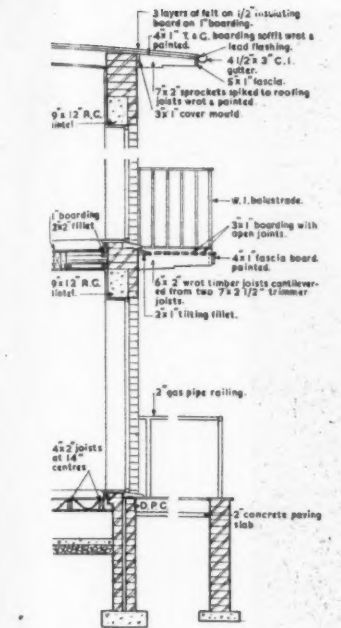
TYPICAL FLAT PLAN

(Scale: $\frac{1}{8}$ " = 1'0")

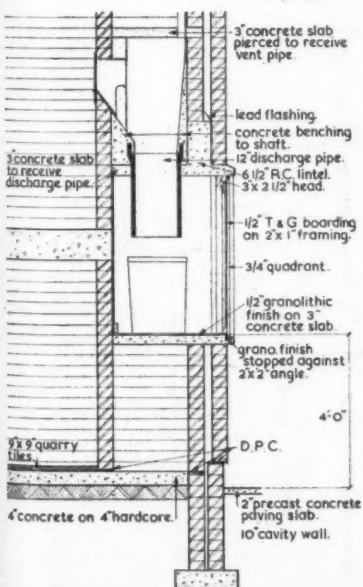


SITE PLAN

H O U S I N G A T C O V E N T R Y :



SECTIONS THROUGH WALLS
(Scale: $\frac{1}{4}$ "=1'0")



DETAIL OF REFUSE CHUTE
(Scale: $\frac{1}{2}$ "=1'0")



Above, an entrance to the flat block. Right, from the north-west.



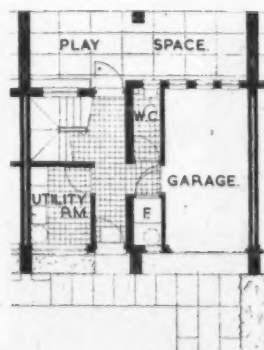
DESIGNED BY D. E. E. GIBSON



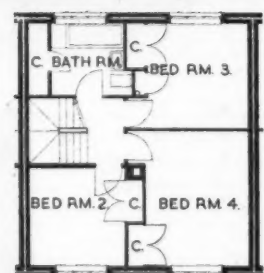
Left, the front elevation of the three-storey houses.

THREE STOREY HOUSES

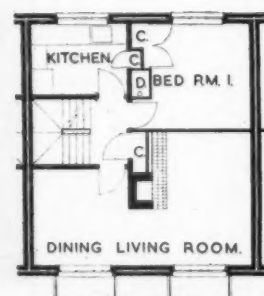
These four-bedroomed houses have a garage and utility room on the ground floor and kitchen and combined dining-living room on the first floor. There is a covered play space on the ground floor. The construction is traditional, and similar to that of the flats. For full list of general and sub-contractors, see page 520.



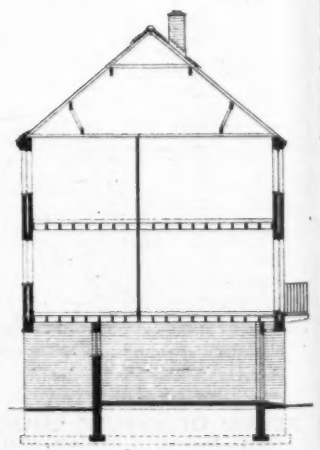
GROUND FLOOR PLAN
(Scale: $\frac{1}{8}$ " = 1' 0")



SECOND FLOOR PLAN

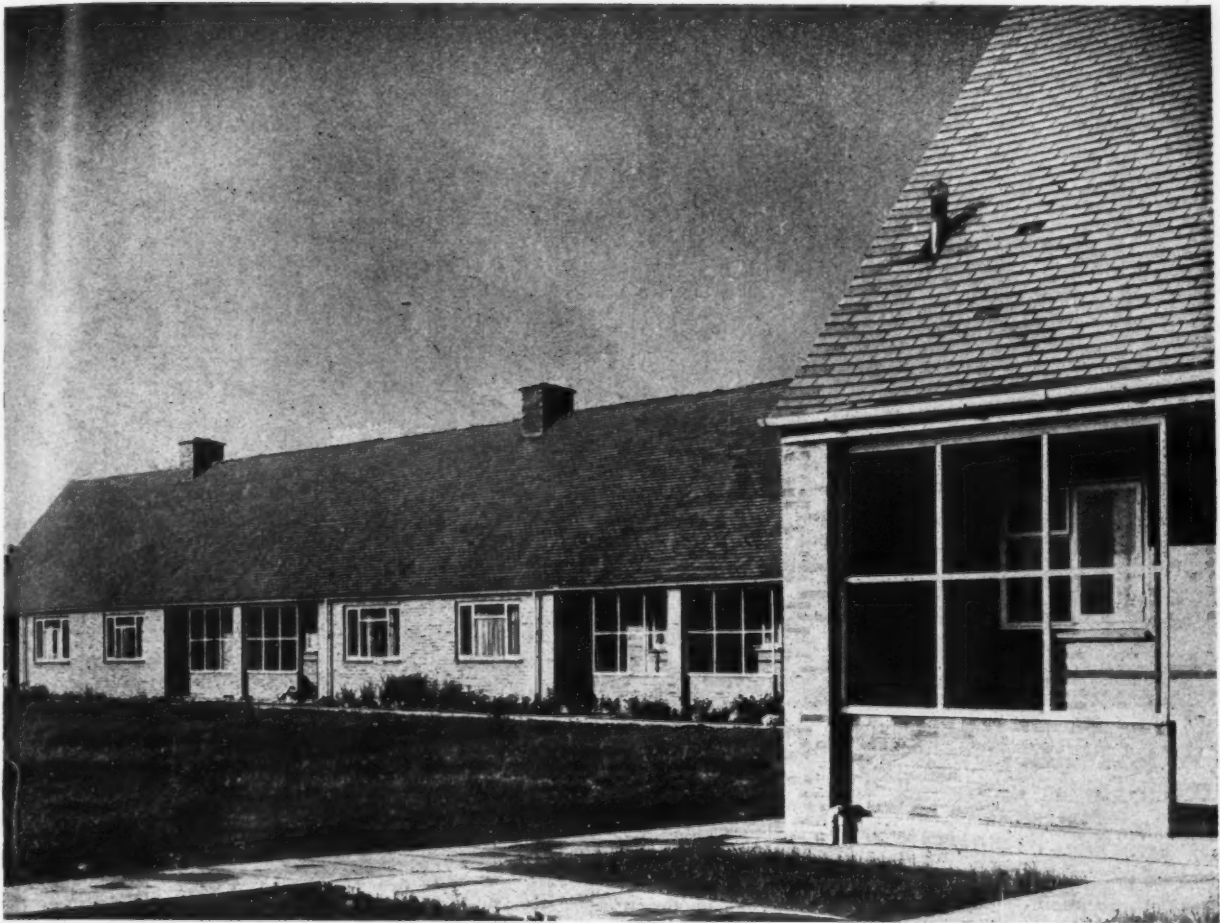


FIRST FLOOR PLAN



SECTION

SING AT COVENTRY

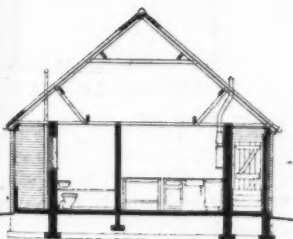


Above, the old people's bungalows laid out in terraces, and below, laid out in pairs.

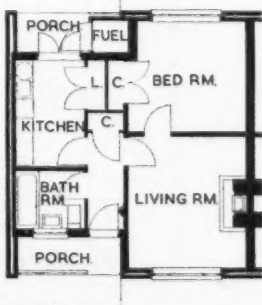
OLD PEOPLE'S BUNGALOWS

The accommodation consists of a bedroom, living room, kitchen and bathroom. A sheltered porch enables the occupants to sit outside. The construction is tradi-

tional. Hot water is provided by instantaneous gas water heaters. For full list of general and sub-contractors see page 520.



SECTION



PLAN (Scale: $\frac{1}{8}$ " = 1'0")



DESIGNED BY D. E. E. GIBSON



TWO-STOREY HOUSES

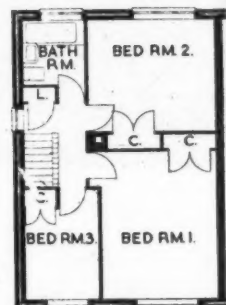
These three-bedroomed houses each have a single large living room partially divided by a fireplace to form a dining recess. The kitchen has a door leading direct into the dining room. In the rear of each house is a store room, with a smaller fuel store and an outside w.c. The houses have open smokeless fuel grates in the living rooms

with back boilers, and a tile surround to the fireplaces. The construction throughout is traditional, and all finishes are the same as those used in the flats.

The architect has taken great care in the layout of the terraces to make full use of the slight changes in levels in the site in order to provide variation and interest in the stepped ridge lines.

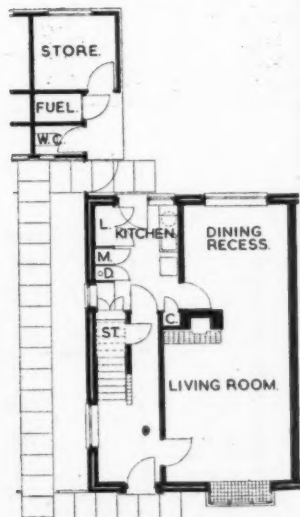
For full list of general and sub-contractors see page 520.

Part of a typical square.



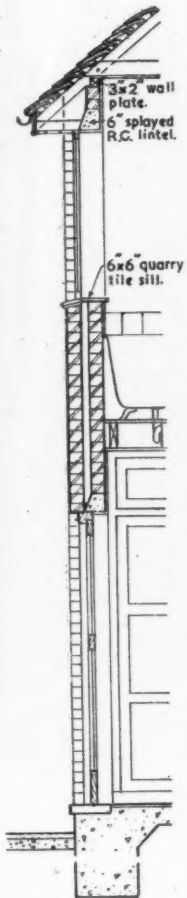
FIRST FLOOR PLAN

Below, the rear of the houses and a screen wall hiding the outhouses.



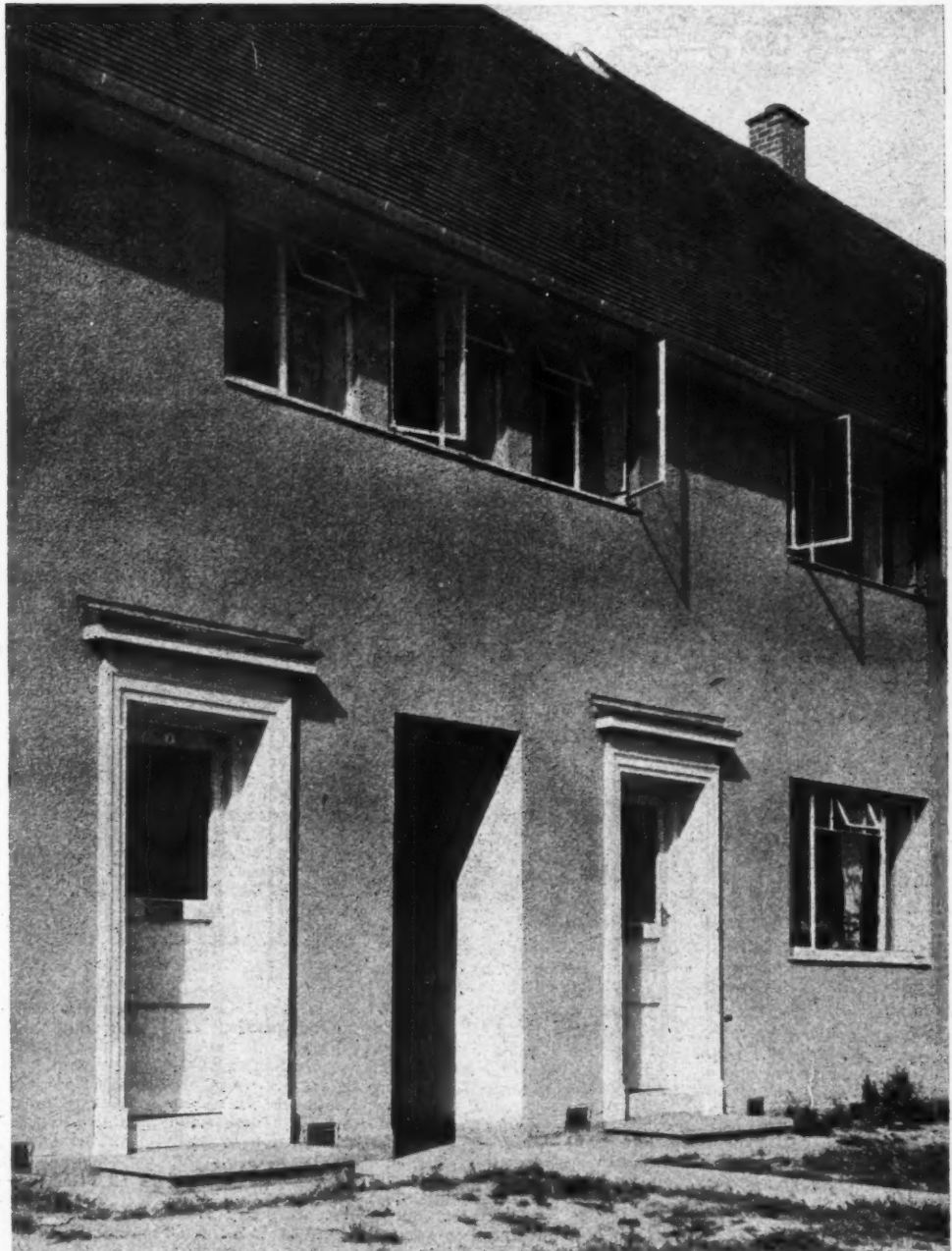
GROUND FLOOR PLAN
(Scale: 1/4" = 1' 0")

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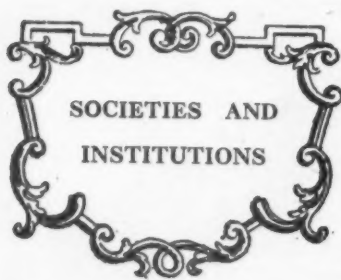


SECTION THROUGH WALL
(Scale: $\frac{1}{2}$ "=1'0")

Right, detail of two-storey house. Below, two typical terraces.



DESIGNED BY D. E. E. GIBSON



Speeches and lectures delivered before societies as well as reports of their activities, are dealt with under this title, which includes professional societies, trade associations and government departments. To save space they are represented by their initials—see front cover. Lectures cannot usually be reported in full, but the extracts given are in the speaker's own words.

DIA

Nikolaus Pevsner and Misha Black

November 3. At the Royal Society, Piccadilly. The subject of the talks was FOREIGN TRENDS IN DESIGN AND THEIR EFFECT IN THIS COUNTRY. Mr. R. D. Russell was in the chair.

Nikolaus Pevsner : Industrial design is two things at the same time. It is a matter of commodity and it is a matter of art. As far as the commodity side of design is concerned, obviously there are some things which work better than others, and manufacturers naturally imitate those which work better.

As far as stimulation by foreign design is concerned, I would ask you to try to distinguish between two possibilities. Foreign design can be used as a stimulus in order to reinforce existing national qualities and in order to counterbalance existing national qualities.

As far as foreign design being used to reinforce national qualities is concerned, I am emphatically in favour of that. Historically speaking, England in the eighteenth century was internationally known as a land of reason and freedom, and it was known to a certain extent as a country of taste. English eighteenth century architectural design is characterised by a very great care for proportions and comparatively little interest in decoration, even decoration applied very subtly and exceedingly well. It was the very simple forms, compared with the rococo on the Continent, which impressed people. Beyond that, there was a universal and very strong feeling for the necessity of first-class workmanship in things which were made for the ruling class, the rich. Then the nineteenth century brought a tremendous wave of inventiveness, and suddenly people on the Continent came to England to buy their first locomotives, their first mechanical looms and their first rollers for printing wallpapers, and so on. As you know, this tremendous ease of production and the great

wealth that it brought us changed the character of the country to a very great extent. Cheap goods became possible and nasty goods were not minded. William Morris tried to recover the old tradition, but it remained rather superficial, and when jazz came in about the year 1925 there was no power of resistance against it. It cannot be regarded as reinforcing national qualities in England, but it was certainly something that came from abroad. It came from Central Europe in terms of expressionism of rather hysterical forms, but forms which had a certain meaning, and it came in terms of streamlining—in neither case a reinforcement of existing national qualities.

THE SMALLER COUNTRIES

There are certain countries which at the moment are, in their standards of design and their attitude towards design, similar to England in the eighteenth century. In some of the smaller countries with smaller populations, handicrafts are still very much alive and a sense of appreciation of precision of proportion is also very much alive. I am alluding to Scandinavia, Denmark and Switzerland. They are amongst the phlegmatic countries, which enables them perhaps to reinforce existing qualities here. Of course, there are differences between them. I was interested to read the other day a book by a Danish architect, in which he very strongly emphasizes the great difference between the Danish and the Swedish outlook in art, and he mentions certain qualities which I do not think we see to quite the same extent. He says the Danes are very reasonable, urbane, worldly wise, rather whimsical and ironical, whereas the Swedes are imaginative, romantic, and so on. It is worth listening to that. It may be that, coming from here, one sees the difference less and the unity more. Anyway, they are democratic countries, and they can reinforce certain things which have existed in this country and which need reinforcing. It will not be easy, because of the situation here after the practical extinction of the craftsman and after the practical extinction of very much care for the house.

Misha Black : In general terms, the position as I see it is as follows. Some of the very best goods designed in Great Britain are fractionally better than the very best designed in America, and in other commodities some of the very best goods designed in America are fractionally better than their best counterparts in this country. Below the top level, the very best, in America and Britain, the unmitigated horror of the other commodities is pretty evenly balanced in the two countries, but America has the enormous advantage of a very large domestic market, and consequently the total quantity of well designed goods in America is immeasurably greater than the total quantity of well designed goods in this country today. An architect faced with the problem of providing fittings for offices, domestic premises or shops today would find it extremely difficult in Great Britain to find enough well designed articles to suit his purpose. In America his task would be immeasurably easier, because of the quantitative advantage which the American market has today.

The American manufacturers have deliberately exaggerated, especially before the war, the fashion or stylistic aspect of all kinds of commodities. They have, in fact, stressed over and over again the importance of creating a style or a fashion in such solid articles as, for example, motor cars, refrigerators and even machine tools. The American manufacturers, as we know, will prepare and design a whole range of refrigerators, for example, and will deliberately bring one pattern out one year, another pattern the next year, and

another pattern the third year, so that the people who bought a refrigerator three years ago will feel that theirs is an old-fashioned outmoded refrigerator and will want to buy the very latest model.

FASHION AND STYLE

If you object, as some people may, to my so stressing the importance of fashion or style, I would ask you to think of one or two things where what has happened is absolutely apparent. Let us take, for example, the question of streamlining. Streamlining as a style, which is what I believe it is, oozed from America in the 1930's, and gradually spread pretty well all over the world, so that this style, which was deliberately set by the American designers, has had an enormous influence on every designer in every country in the world which has been concerned with the light engineering trades. To go further down the scale, I think that the triple line decoration, which had its peak in America in the 1930's, has gradually influenced designers all over the world, and particularly in Great Britain, to use the same stylistic ornament, which, in my opinion, has ruined more radio sets, motor cars and other commodities than almost any other current design triviality that has been invented.

The reaction is (and this is where the danger really lies) that when America takes the lead the British designers, particularly those who are concerned with sales to the overseas markets, tend to imitate the American style, and to do so, as often as not, in cases where the natural approach of the British designer, if he was left alone and was not influenced by the American style, would be completely out of sympathy with the work produced across the Atlantic. The result is that the British designers try to design in a style with which they have no sympathy, and they consequently fall further and further behind in the race for world markets, becoming mere copyists, and inferior copyists in many cases, of USA designs.

TRADITION AND DESIGN

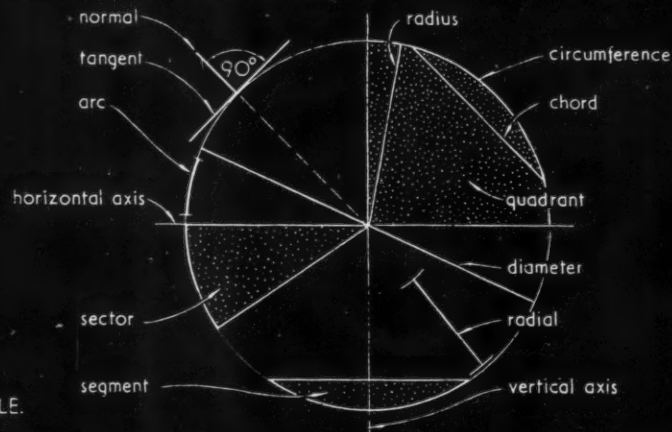
The American designers have been helped very much by the fact that America has very little national design tradition. It is a new country, and it has that particular advantage. The designer setting out to do a job is not inhibited all the time by thinking whether he is designing in the American tradition, whatever that may be, and he can therefore decide to do what he considers best for the job. On the other hand, many designers in this country sit rather uncomfortably sideways at their desks, with one eye peeping into the past and the other eye glaring into the future, and they get into a kind of chaotic state because of that. I believe that it is important to retain national characteristics in design. I think that if national characteristics are wiped out, half the framework of life departs completely, but I do not think it is possible to get any kind of national atmosphere in design by the designer consciously trying to achieve it. To sit down and say: "I am going to design in the Georgian tradition" is, I think, completely abortive to any good work. I think that the designer should sit down and say: "This is the problem; I shall now try to find the best possible solution for it and leave national characteristics to look after themselves." If a designer tries consciously to design to a style he must be looking backwards, and if a designer is always sitting with his eyes looking to the back of his head his designs will never have the atmosphere, the quality, the ingenuity and the creativeness which can regain for this country the lead in those fields of design where America is at the moment. I think, challenging us rather seriously.

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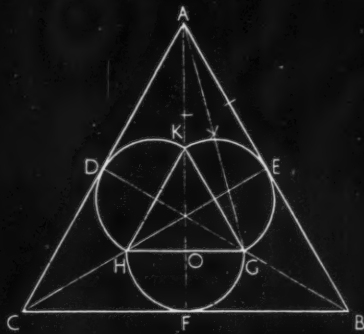
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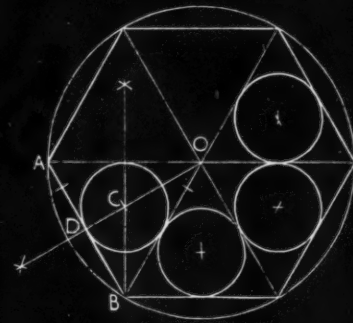
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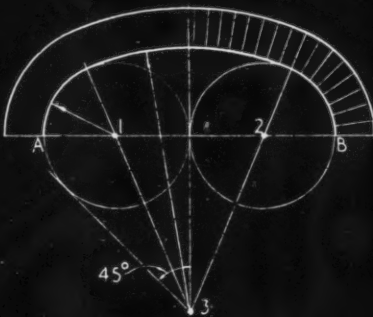
PROPERTIES OF A CIRCLE.



● INSCRIBED SEMI-CIRCLES.



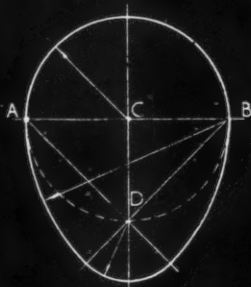
INScribed TANGENT CIRCLES.



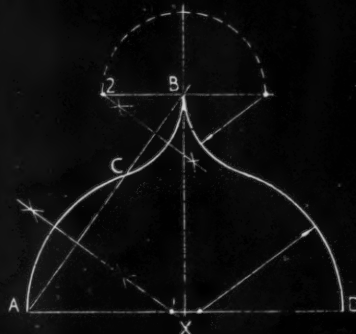
3-CENTRED ARCH.



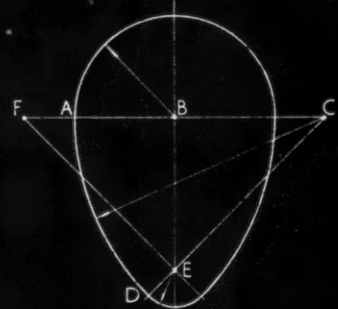
5-CENTRED ARCH.



W.C. SEAT.



OGEE ARCH OR DOME.



EGG-SHAPED SEWER.

1.B12 GEOMETRICAL CONSTRUCTION: CIRCLES AND PART-CIRCULAR FORMS

This Sheet defines the properties of a circle and explains the geometrical construction of various part-circular forms.

Definitions

Circle: A plane figure bounded by a curved line (circumference) all points on which are equidistant from a given point (centre).

Arc: A part of the circumference.

Chord: A straight line, shorter than the diameter, terminated at both ends by the circumference.

Diameter: A straight line passing through the centre of the circle and terminated at both ends by the circumference.

Normal: A straight line drawn from any point on the circumference radial to the centre of the circle.

Quadrant: An exact quarter of a circle.

Radial: A line in the direction of a radius not necessarily terminated at one end by the circumference or the other by the centre.

Radius: A straight line drawn from the centre of a circle to the circumference.

Sector: A part of a circle contained between two radii (not in the same line) and the part of the circumference which they cut off.

Semi-circle: A half circle; the parts on either side of a diameter.

Segment: A part of a circle contained between a chord and its arc.

Tangent: A straight line touching the circumference of a circle at one point and at right angles to a normal at that point.

Inscribed Semi-Circles

The diagram shows three equal semi-circles, tangential to the sides of an equilateral triangle.

Geometrical construction: Draw the triangle ABC and bisect the sides in D, E and F respectively. Bisect the angle FAB and produce the bisector to cut BD in G. Mark point H on CE and point K on FA so that EH equals FK equals DG. Construct the smaller equilateral triangle GHK on the sides of which the required semi-circles can be described.

Inscribed Tangent Circles

The diagram shows six equal circles within, and tangential with the sides of, a regular hexagon.

Geometrical construction: Draw the hexagon and divide it into six equilateral triangles. Taking one triangle ABO, bisect the angles ABO and AOB to find the centre C and the radius CD of one of the required circles. The centres of the remaining five circles can be found from this.

3-centred Arch

The diagram gives the profile of a 3-centred "elliptical" arch. The term elliptical is used loosely in this instance since in a true ellipse there is no part of a circle and therefore any method involving arcs of circles cannot produce a true ellipse.

Geometrical construction: Divide the clear span, AB, into four equal parts. Points 1 and 2 are the centres of tangent circles: with radii 1A and 2B describe these circles. From each circle tangent lines at 45° to the horizontal are drawn to intersect at 3. With centre 3 and the radius extended to become tangent to the circles, an arc can be drawn to complete the soffit of the arch. Note the radiating joint lines from centres 1, 2 and 3.

5-centred Arch

The diagram gives a somewhat better proportioned, although not a true, profile of an elliptical arch. It is known as a 5-centred "elliptical" arch, and like the previously described arch is exceptionally useful in the case of gauged brickwork since three patterned sets of arch bricks can be made to radiate the joints from the centres where the arcs of circles are struck.

Geometrical construction: Divide half the clear span into three equal parts A, 2, 1, 0. Proportionately divide the rise OC into three equal parts. Produce the axis CO in P so that CO = OP. Radiate lines C1' and C2', then radiate a line from P through 1 in D. Bisect DC in F. With radius FC and centre F describe arc CD. This is the first half unit of brick work which can be divided up into brick units. Radiate a line from P through 2 in E. Bisect DE in G. This point is the centre for the next arc the radius being GE. The point H where GE cuts AB is the centre for the last arc EA.

W.C. Seat

The diagram gives the profile of a w.c. seat, the construction being self-explanatory.

Ogee Arch or Dome

The diagram gives the profile of an ogee (double curve) for an arch or dome.

Geometrical construction: Plot the span AD and rise XB. Draw a line AB and at any suitably chosen position mark off C. Bisect AC in 1, then bisect CB in 2. With centre 1 and radius 1A also 2 and radius 2B describe arcs to complete the double curve.

Egg-Shaped Sewer

The diagram gives the profile of an egg-shaped sewer the construction being self-explanatory.

This Series of Sheets covers geometrical drawing, orthographic, isometric and axonometric projections perspective, rendering, lettering and draughtsmanship generally.

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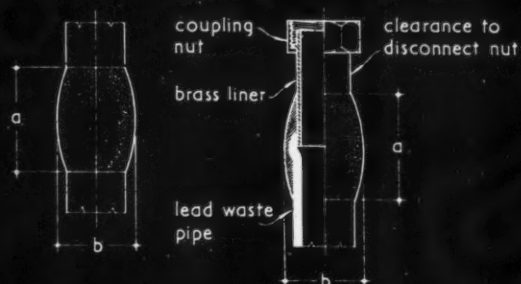
Eagle Pencil Company.

Address: Ashley Road, Tottenham, London, N.17.
Telephone: Tottenham 4435-6-7.
Telegrams: Octennial, London.

WATER SUPPLY AND SANITATION | DETAILS | LEAD

33.C5

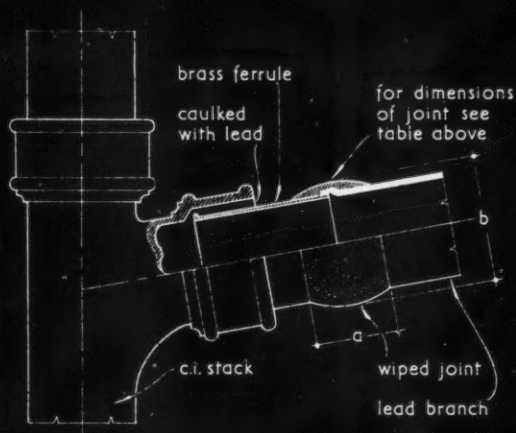
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RUNNING JOINT.
(see also Sheet 33.C4)

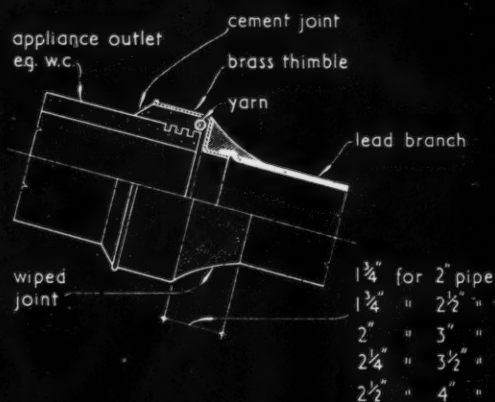
SCREW CONNECTION.

bore of pipe	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
a	3"	3 1/4"	3 1/4"	3 1/4"	3 1/2"	3 1/2"	3 1/2"
b	2 1/8"	2 3/8"	3"	3 1/2"	4"	4 1/2"	5"
solder allowance	1 1/4 lb.	1 1/2 lb.	2 lb.	2 1/4 lb.	2 1/2 lb.	2 1/2 lb.	3 lb.

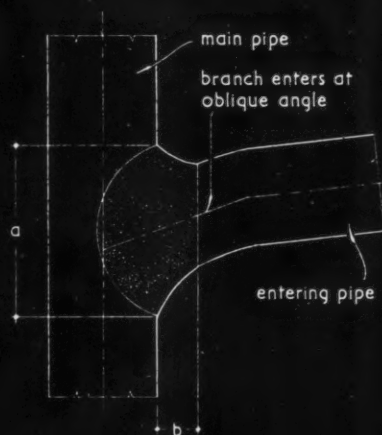
note: dimensions given can only be approximate

TABLE GIVING SIZES AND SOLDER ALLOWANCES FOR
WIPED SOLDERED JOINTS.

SOCKET CONNECTION.



SPIGOT CONNECTION.



BRANCH JOINT.

main pipe entering pipe	1 1/4"	1 1/2"	2"	3 1/2"	4"	4"	4"	4"
a	4"	4 1/2"	5"	5"	5 1/2"	6 1/2"	7"	7 1/2"
b	1 1/4"	1 1/4"	1 3/8"	1 3/8"	1 3/8"	1 1/2"	1 5/8"	1 3/4"
solder allowance	1 1/2 lb.	1 3/4 lb.	2 lb.	2 lb.	2 lb.	2 1/2 lb.	2 1/4 lb.	3 lb.

note: dimensions given can only be approximate

• dimensions for unequal branches as for entering pipe

JOINTS FOR LEAD SOIL AND WASTE PIPES: CHARACTERISTICS.

Compiled from information supplied by The Lead Industries Development Council.

33.C5 JOINTS FOR LEAD SOIL AND WASTE PIPES: CHARACTERISTICS

This Sheet summarises approved types and acceptable characteristics of joints for lead soil, waste and vent piping. The characteristics of joints for lead water service and distribution piping are summarised on Sheet 33.C4. The joints shown in the examples illustrated are all wiped soldered joints. For a more detailed description of the wiped soldered joint itself see Sheet 33.C4.

Thin walled lead pipes are normally used for soil, waste and vent piping, hence the variations in the upper table on this Sheet and the upper table on Sheet 33.C4 for $1\frac{1}{4}$ in. and $1\frac{1}{2}$ in. bore pipes.

Screw Connection

This is normally used for connecting lead pipe to the waste outlet of a sanitary appliance, the pipe sizes generally being $1\frac{1}{4}$ in., $1\frac{1}{2}$ in. and 2 in. bore. The liner (tail) is jointed to the pipe with a wiped soldered joint, allowing sufficient clearance for disconnecting the coupling nut. As an alternative to the wiped soldered joint for this purpose the soldered spigot joint (for $1\frac{1}{4}$ in. and $1\frac{1}{2}$ in. pipe) or finger-wiped joint may be used (see Sheet 33.C4).

Socket Connection

For connecting lead pipe to the socket end of an iron or stoneware pipe, the joint is made by jointing a brass ferrule (sleeve) to the pipe by means of a wiped soldered joint. The lead pipe may be passed through the ferrule and turned over the end, or alternatively the mouth of the pipe may be opened (as illustrated) to receive a short insertion of the ferrule.

The joint between brass ferrule and cast iron socket is made by inserting a gasket of hemp or yarn and caulking with molten lead or lead yarn.

The joint between brass ferrule and stoneware socket is made by inserting a gasket of hemp or yarn and filling with Portland cement and sand.

Spigot Connection

For connecting lead pipe to the spigot end of a pipe, such as on an appliance outlet, the joint is made by jointing a brass (or similar) socket to the pipe with a

wiped soldered joint. The joint to the ceramic spigot of a sanitary appliance is made by first inserting a gasket of hemp or yarn and then filling the socket with Portland cement and sand, or alternatively a mixture of red and white lead putty with which finely chopped hemp has been mixed.

A joint to a cast iron spigot is made by first inserting a gasket of hemp or yarn and then caulking with molten lead or lead yarn.

Branch Joint

The entering pipe of a branch should meet the main pipe at an oblique angle to promote easy flow conditions. Neat branches, with a "kick" in the direction of flow for the entering pipe, and smooth bends are a characteristic of good lead disposal plumbing. The ease with which lead pipe can be bent and deviated makes it practicable to obtain easy flow conditions even with pipework in a confined space.

Leadburned Joint

As an alternative to the wiped soldered joint the leadburned joint may be used in all the above cases. This type of joint is described on Sheet 33.C6.

Further Information

The Lead Industries Development Council maintains a Technical Information Bureau which is available to answer questions and advise on technical problems dealing with this subject generally.

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The Lead Industries Development Council.

Address : Eagle House, Jermyn Street, London, S.W.1.

Telephone : Whitehall 7264.

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TECHNICAL SECTION

This week, instead of Information Centre, the JOURNAL is giving the results of the recent house heating trials undertaken by the Building Research Station at Abbot's Langley. The photographs are reproduced by permission of the Director of Building Research and are the copyright of the Crown.

THE BRS HOUSE HEATING TRIALS

These trials are the most important piece of scientific research into the economics of space heating, water heating and cooking yet undertaken in any country. Hitherto, there has been a serious lack of accurate information on the subject; a lack clearly expressed in the report of the Egerton Committee: and it was upon the recommendations of this Committee that the trials were initiated.

The trials were organized in two parts: the first, in which the houses were unoccupied, but the heating, hot water and cooking requirements of average occupancy simulated as nearly as possible by members of the BRS staff; the second, in which the houses are occupied by tenants chosen by the local council.

The first stage is complete, and it is on the preliminary report upon it that this article is based. During this stage, also, a very complete installation of remote recording instruments was perfected, which enables the accurate taking of measurements to continue, now that the second stage has begun. Thus, the experiment can proceed with a minimum of interference with the lives of the tenants: a most important factor if realistic results are to be achieved. The results so far attained show much that is valuable, both to the architect and to the maker of heating appliances; in some cases, old theories are exploded, in others, facts already known from experience now receive the backing of scientific proof.

To this end, ten pairs of houses were built on an exposed site near Abbot's Langley. They are of the usual size of 925 ft. super, and as a single plan would not satisfactorily accommodate all the various combinations of appliances, they are of two types. The first, or "A" type, has a through living room of 240 ft. super, a kitchen, with a dining space, of some 150 ft., and three bedrooms of 137, 127 and 62 ft. The second, or "B" type, has a parlour varying in size from 118 to 164 ft., and a kitchen-living room, varying from 118 to 161 ft., whilst the bedrooms are of 148, 118 and 64 ft.

The planning is, of necessity, influenced by the requirements of the various heating installations to be made, so that a criticism, that in ground floor rooms there is an

uncomfortable juxtaposition between door and heat source, cannot be held to the charge of the designer; rather, it is a fundamental defect in certain types of appliances that such planning is made necessary.

The wall construction varies from house to house, for it was made the subject of experiment in the laying of bricks and blocks, but interior insulation was added to reduce the "U" value to approximately .20 in each case. In some instances, the insulation takes the form of a 1 in. wood wool slab affixed to the wall by a cement screed, and plastered; in others, the wall is battened and covered with insulating board, finished with a skim coat of plaster.

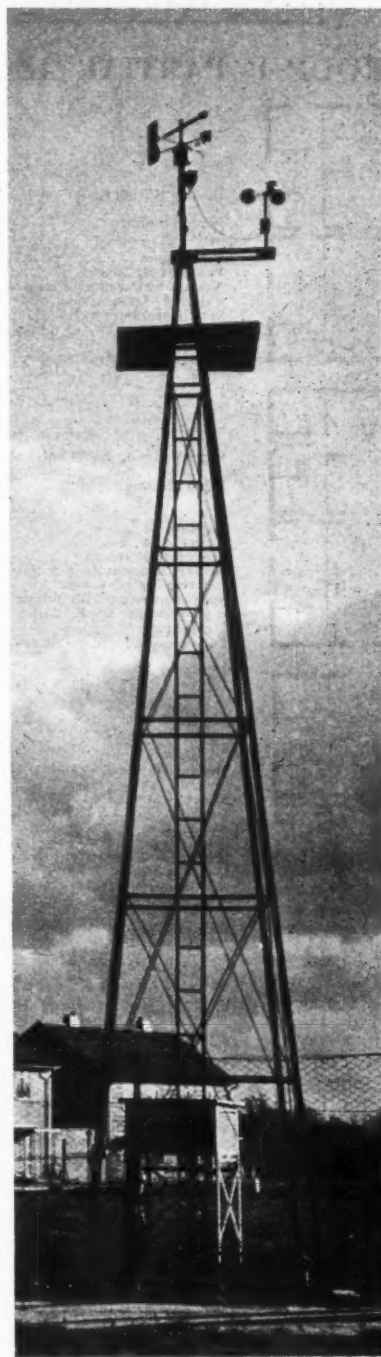
Roofs are of timber construction, with concrete tiles laid on felt; insulation is provided by the laying of 1 in. slag wool between the ceiling joists, on top of the plaster board ceiling. As in many cases room or appliances are vented into the roof space, special care is taken to secure adequate ventilation. The "U" value for the ceiling with its insulation is .17. Ground floors are of solid construction, with 4 in. concrete laid on hardcore, and overlaid with a damp-proof membrane. Finish in the kitchens is quarry tiles ("U" value .20) and in the living rooms, battens and timber flooring ("U" value .17).

It will be seen that the insulation values recommended by the Egerton Committee are met, and, therefore, that the houses are considerably better insulated than the majority of those at present being built, whose cavity walls give a "U" value of .30 or more, and uninsulated ceilings to upper floors "U" = .40. Some results of this good standard of insulation will be noted later. The standard of heating aimed at is not the same throughout; it can be divided into three groups. The first may be called the partial standard, wherein an open fire is used in the living room, but other rooms are unheated, except for the kitchen, which derives what heat it may from the cooking or water heating equipment fixed there.

The second may be called the "two-stage" standard, for it follows the recommendation of that report, by providing background heating throughout, with some local means of "topping up" the heat in each room. The third, described as "whole house," provides for the maintenance of a temperature rise of 30°F. throughout the house, from one central source.

The useless by-law airbricks are not used as a means of ventilating rooms, other than bathrooms and larders; the general principle has been adopted that air for each habitable room should be drawn either from the outside air or from the hall or landing, and discharged either through the flue of a heating appliance, or through a duct to the roof space. Kitchens are also usually vented to the roof space, and there seems a slight risk that an accidentally reversed airflow might carry cooking smells to the other rooms.

Unauthorised ventilation, due to ill-fitting wood windows, has been reduced by the fitting of two casement fasteners in place of one, on all the larger casements, whilst in the case of external doors, the application of a bronze draught strip has been used as an effective, though expensive, solution of the problem.



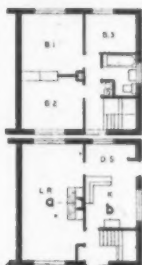
This wind tower installed on the site is used to record the direction and velocity of the wind during trials.

In some cases, where solid-fuel appliances are used, an attempt is made to reduce the possible excessive rate of air-change by installing an under-floor air flue to the open air. This terminates in a grille near to the fire, but it must be said that experience shows that such devices are generally disappointing in their results.

Now, to examine in greater detail the individual houses, and the installations in them, and to compare both the capital and running costs of each, and the results attained.

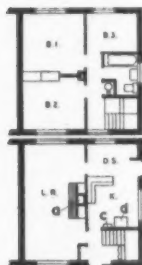
The capital cost includes not only that of the appliances themselves but that of

GROUP I PARTIAL HEATING STANDARD



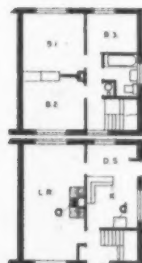
HOUSE No. 20

Heating (Living Room only) ..	Open coke fire with gas ignition (a).
Water Heating	Solid fuel cooker with boiler (b).
Cooking	
Capital cost	£115
Fuel cost per annum	£38
Average temperature of rooms during heating season ..	Living room.. 61.8° F.
Spot temperature with outside temperature 30° F. during cold spell ..	Bedrooms .. 52.8° F.
Labour expended in attendance ..	Living room.. 61.5° F.
	Bedrooms .. 45.0° F.
	95 mins. per week.



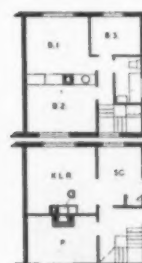
HOUSE No. 21

Heating (Living Room only) ..	Closeable fire with back boiler (a).
Water Heating	As above, but supplemented by instantaneous gas heater (c).
Cooking	Gas cooker (d).
Capital cost	£120
Fuel cost per annum	£26
Average temperature of rooms during heating season ..	Living room.. 60.7° F.
Spot temperature with outside temperature 30° F. during cold spell ..	Bedrooms .. 53.1° F.
Labour expended in attendance ..	Living room.. 57.5° F.
	Bedrooms .. 45.0° F.
	110 mins. per week.



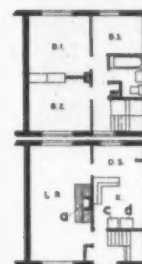
HOUSE No. 22

Heating (Living Room only) ..	Openable stove, with back boiler (a).
Water Heating	As above.
Cooking	Gas cooker (d).
Capital cost	£105
Fuel cost per annum	£24
Average temperature of rooms during heating season ..	Living room.. 61.2° F.
Spot temperature with outside temperature 30° F. during cold spell ..	Bedrooms .. 52.8° F.
Labour expended in attendance ..	Living room.. 55.5° F.
	Bedrooms .. 45.0° F.
	90 mins. per week.



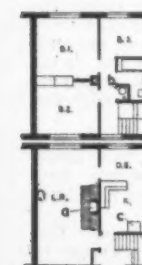
HOUSE No. 31

Heating	Back to back range (a) with boiler, and alternative gas cooker in same unit.
Water Heating	
Cooking	Convection warm air to one bedroom.
Capital cost	£130
Fuel cost per annum	£27
Average temperature of rooms during heating season ..	Living room.. 63.3° F.
Spot temperature with outside temperature 30° F. during cold spell ..	Bedrooms .. 55.7° F.
Labour expended in attendance ..	Living room.. 57° F.
	Bedrooms .. 48° F.
	185 mins. per week.



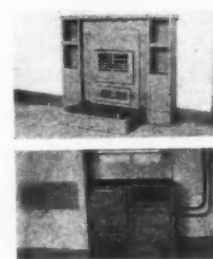
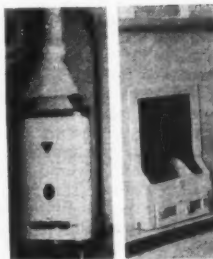
HOUSE No. 33

Heating (Living Room only) ..	Open fire (a).
Water Heating	Independent boiler (c).
Cooking	Gas cooker (d).
Capital cost	£120
Fuel cost per annum	£29
Average temperature of rooms during heating season ..	Living room.. 61.3° F.
Spot temperature with outside temperature 30° F. during cold spell ..	Bedrooms .. 51.4° F.
Labour expended in attendance ..	Living room.. 59° F.
	Bedrooms .. 42° F.
	140 mins. per week.



HOUSE No. 34

Heating (Living Room only) ..	Open fire with back boiler (a).
Water Heating	As above, with 40-gal. cylinder in linen cupboard (b).
Cooking	Gas cooker (c).
Capital cost	£90
Fuel cost per annum	£19
Average temperature of rooms during heating season ..	Living room.. 59.5° F.
Spot temperature with outside temperature 30° F. during cold spell ..	Bedrooms .. 50° F.
Labour expended in attendance ..	Living room.. 53° F.
	Bedrooms .. 42° F.
	85 mins. per week.



their installation, including flues where necessary. In this connection, it may be noted that the cost of metal flues, including the shrouding required for fire protection and the like, proved very much greater than that of brick flues. Further, there must always be risk of damage by corrosion, leading to heavy replacement charges, and, worse still, of the escape of gases into occupied rooms.

Some surprise may be felt when it is noticed that in all but two of the "partial" houses, comfortable or even really warm conditions were maintained in the living rooms during the cold spell, whilst enough heat was transmitted to the unheated bedrooms above to keep them at a temperature at least 13° F. above freezing point. This is partly because, although these systems are nominally "pre-war," they are so only in that the main heating appliance is fixed in the living room, and does not supply heat directly to any other room: the apparatus itself is of modern and efficient design.

Incidentally, open fire lovers will be pleased to know that an efficiency figure as high as 50 per cent. has been achieved with the internal flue.

It will be noticed that even in the case of houses Nos. 33 and 34, in which genuine pre-war equipment was installed, to act as a control, tolerable conditions prevailed; in both cases a bedroom temperature of 42° F. was recorded, the reason being that the houses are well insulated.

The method of insulation has already been described, and there is no reason why it should not be adopted in ordinary practice for the figures show the cost to be well worth while. It might be found that even higher standards were not uneconomic, and the use of double glazing of the Scandinavian pattern is worthy of consideration in exposed positions. Every improvement in insulation must be reflected in the cost of heating a house; and the added capital cost might well be offset by a possible simplification of the heating equipment necessary to achieve the required standard of comfort. Now that these trials have provided accurate information as to the economics and efficiencies of house heating, a fair appraisal of the balance of cost, as between the insulation and the heating system, should be possible. Nor can it be forgotten that, whereas the benefits of a heating system are only of use to the occupants of the house in winter, those of improved insulation can add equally to their comfort in summer.

Before leaving the matter of insulation, one word of warning, derived from experience, may be given in connection with ceiling insulation which prevents heat from bedrooms reaching the roof space, where tanks and pipes are usually placed. The insulation of these is effective in preventing trouble when the cold spell is of comparatively short duration; but when it is prolonged, and especially when it is accompanied by strong winds, freezing may occur. Some care in design is necessary, in order that the tanks and pipes may share in the heat of the building, without being a source of serious leakage.

The question of heat loss is closely allied to that of rate of air change, for some 30 per cent. of the heat input into a house is lost from this cause. It is interesting to notice that figures are given of the cost per year, per air change, for houses equipped with heating of the three standards:—Partial £2 15s.; two-stage, £4; whole house, £2 19s. The overall rate of air change in a house, recommended by the Egerton Committee Report is 1.2 per hour; that measured in the trial houses, after the fitting of weather-strips to the external doors, varied between 2 and 2.5, whilst it was shown that

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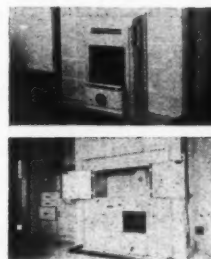
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House No. 35	
Heating (Parlour only).....	Open fire (b).
Water Heating	Oven-over-fire cooker
Cooking	with back boiler (b).
	40 gal. cylinder in
	linen cupboard.
Capital cost	£110
Fuel cost per annum	£27
Average temperature of rooms	Living room.. 63.9° F.
during heating season	Bedrooms .. 53.7° F.
Spot temperature with outside	Living room.. 64° F.
temperature 30° F. during	Bedrooms .. 46° F.
cold spell	
Labour expended in attendance	150 mins. per week.



House No. 36	
Heating (Parlour only).....	Improved open fire (a).
Water Heating	Combination grate, with
Cooking	back boiler (b), 40-gal.
Heating K.L.R.	insulated H.W.T.
Capital cost	£140
Fuel cost per annum	£41
Average temperature of rooms	Living room.. 61.6° F.
during heating season	Bedrooms .. 53.6° F.
Spot temperature with outside	Living room.. 65° F.
temperature 30° F. during	Bedrooms .. 45° F.
cold spell	
Labour expended in attendance	210 mins. per week.



GROUP II TWO STAGE HEATING STANDARD



House No. 9	
Heating	Background : Closeable fire (a),
	convection warm air to bed-
	rooms, radiator (f) from
	boiler. F.A.D. under floor.
	Topping up : Electric radiant
	fires (b).
Water Heating	Independent domestic boiler (c).
Cooking	Gas cooker (d).
Capital cost	£190
Annual fuel cost	£33
Average temperature of rooms	Living room.. 62.3° F.
during heating season	Bedrooms .. 54.7° F.
Spot temperature with outside	Living room.. 59° F.
temperature 30° F. during	Bedrooms .. 48° F.
cold spell	
Labour expended in attendance	155 mins. per week.



House No. 10	
Heating	Background : Closeable fire (a),
	convection warm air to bed-
	rooms. Gas convector in
	hall (f). F.A.D. under floor.
	Topping up : Radiant gas
	fires (b).
Water Heating	Gas storage boiler (c).
Cooking	Gas cooker (d).
Capital cost	£180
Annual fuel cost	£35
Average temperature of rooms	Living room.. 60.8° F.
during heating season	Bedrooms .. 54.9° F.
Spot temperature with outside	Living room.. 59° F.
temperature 30° F. during	Bedrooms .. 52.5° F.
cold spell	
Labour expended in attendance	115 mins. per week.



House No. 11	
Heating	Background : Gas radiant fire
	(a), with convection warm air
	to one bedroom. Gas convector
	(f) in hall.
	Topping up : Radiant gas fires
	(b).
Water Heating	Solid fuel storage boiler (c).
	Towel rail (e). Coil in linen
	cupboard (g).
Cooking	Gas cooker (d).
Capital cost	£180
Annual fuel cost	£33
Average temperature of rooms	Living room.. 60.2° F.
during heating season	Bedrooms .. 53.7° F.
Spot temperature with outside	Living room.. 61.5° F.
temperature 30° F. during	Bedrooms .. 54.5° F.
cold spell	
Labour expended in attendance	135 mins. per week.



House No. 12	
Heating	Electric tubular heaters (f).
	Electric convectors (b). Elec-
	tric radiant fire in L.R. (a).
Water Heating	Solid fuel storage boiler (c).
	Towel rail (e).
Cooking	Electric cooker (d).
Capital cost	£130
Annual fuel cost	£34
Average temperature of rooms	Living room.. 59.6° F.
during heating season	Bedrooms .. 53.9° F.
Spot temperature with outside	Living room.. 64° F.
temperature 30° F. during	Bedrooms .. 51° F.
cold spell	
Labour expended in attendance	110 mins. per week.



the fitting of weather-strips in a centrally-heated house reduced the rate by a half change per hour, and thereby saved £1 9s. 6d. a year. This represents an excellent return on the sum invested in the weather-strips. It is doubtful, however, if the high cost of fitting these to all windows also would be justified; rather it is a case for the makers of windows to ensure that their windows are not only reasonably draughtproof when new, but that they should maintain this standard after a considerable time. Careful attention to the type and fitting of the window furniture is of much importance in achieving this; whilst once again, the possibilities of the Scandinavian type of window deserve exploration. As in the case of insulation, the findings of these trials permit an accurate balancing of costs.

To return now to the installations themselves: the next group to be considered is the "two stage" group, with background and topping-up heat from separate sources.

In the majority, the background heat is supplied by a gravity warm air system; the air, drawn through an underfloor duct, is warmed in a chamber at the back of a closeable fire or openable stove, and in all cases by the flue pipe as well, and is discharged through ducts to the bedrooms above. In one case this is supplemented by a radiator in the hall, fed from the domestic hot water boiler; in another, a similar radiator is served by the back boiler of the solid fuel cooker. Topping-up heat is supplied by gas fires in one case, by radiant electric fires in the others. To this group also belongs the prefabricated heating unit.

It may be said that these systems are generally satisfactory from the point of view of heating; and it will be seen that they are slightly cheaper than the whole house systems to install, but are considerably more expensive to operate. In fairness to the actual heating apparatus, however, it should be noted that in two cases where the annual fuel cost seems really excessive—Nos. 18 and 36—the solid fuel cooker is largely responsible, together with the fact that there are two solid fuel appliances, and it may be noted that an installation including a solid fuel cooker with back boiler—a partial system, No. 20—is the runner-up in annual costs; this also has two solid fuel appliances.

An installation comprising electric tubular heaters, under thermostatic control, electric convectors for background heating, and radiant electric fires for topping-up, proves very economical in first cost, and effective as a means of heating. The heavy loading, however, makes it unlikely that the supply authority would accept any number of such installations at this time of acute shortage of generating plant. If electricity is to be used, some form of thermal storage is necessary; but it must still be borne in mind, from the point of view of national economy, that the overall efficiency of electrical generation and distribution is only of the order of 25 per cent. The position is of course different where the waste heat is used in a district heating system; here, houses in the neighbourhood of the station can be supplied by heat piped directly to them, whilst those further away can enjoy the undoubted advantages of electric heating, at reasonable rates made possible by the greatly increased overall efficiency. Reference is made in the report to district heating, where it is properly pointed out that the trials form an accurate basis for assessing the load requirements of such a system.

In another of the "two stage" houses, gas is exclusively used for heating; this proves considerably dearer in installation cost than the electric system, but slightly cheaper to run. In both houses, hot water is supplied by a prototype boiler, burning solid fuel,

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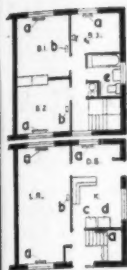
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HOUSE No. 15

Heating Background: radiators (a) in each room under window, hand fired sectional boiler (c). Topping up: Electric radiant fires (b).

Water Heating From boiler above, 40 gal. cylinder Towel rail (e).

Cooking Electric cooker (d).

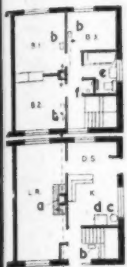
Capital cost £200

Annual fuel cost £30

Average temperature of rooms during heating season Living room.. 61.4° F. Bedrooms .. 56.7° F.

Spot temperature with outside temperature 30° F. during cold spell Living room.. 63.5° F. Bedrooms .. 51.0° F.

Labour expended in attendance 135 mins. per week.



HOUSE No. 17

Heating Background: Inset openable stove (a) in living room, convection warm air heating to bedrooms. Topping up: Electric fires (b) and convectors.

Water Heating Electric storage heater (c).

Cooking Electric cooker (d).

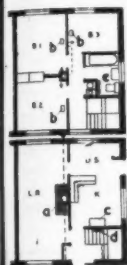
Capital cost £160

Annual fuel cost £35

Average temperature of rooms during heating season Living room.. 60.5° F. Bedrooms .. 56.6° F.

Spot temperature with outside temperature 30° F. during cold spell Living room.. 56° F. Bedrooms .. 48.5° F.

Labour expended in attendance 105 mins. per week.



HOUSE No. 18

Heating Background: Inset openable stove (a), convection warm air to bedrooms. Rad. (d) on stairs from cooker. Fresh air duct under floor.

Water Heating From solid fuel cooker (c). Towel rail (e).

Cooking Solid fuel cooker.

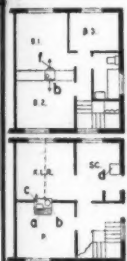
Capital cost £180

Annual fuel cost £42

Average temperature of rooms during heating season Living room.. 64.9° F. Bedrooms .. 59.4° F.

Spot temperature with outside temperature 30° F. during cold spell Living room.. 58.5° F. Bedrooms .. 55.0° F.

Labour expended in attendance 120 mins. per week.



HOUSE No. 32

Heating Background: prefabricated heating unit. Convected air. Topping up: Gas fire.

Water Heating Heat Service unit (e). Gas circulator for summer.

Cooking Gas cooker (d) (in scullery).

Capital cost £175

Fuel cost per annum £24

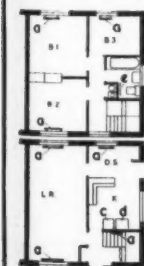
Average temperature of rooms during heating season Living room.. 57.3° F. Bedrooms .. 50.5° F.

Spot temperature with outside temperature 30° F. during cold spell Living room.. 49° F. Bedrooms .. 41° F.

Labour expended in attendance 145 mins. per week.



GROUP III WHOLE HOUSE HEATING STANDARD



HOUSES NOS. 13 AND 14

Heating Magazine boiler (c), radiators (a) under windows in each room.

Water Heating As above, 40-gal. cylinder. Towel rail (e).

Cooking Electric cooker (d).

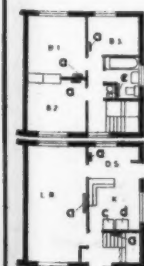
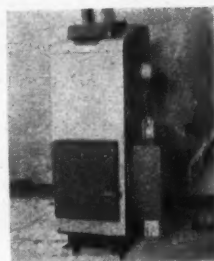
Capital cost £215

Annual fuel cost £25

Average temperature of rooms during heating season Living room.. 61.5° F. Bedrooms .. 57.2° F.

Spot temperature with outside temperature 30° F. during cold spell Living room.. 63.8° F. Bedrooms .. 51.2° F.

Labour expended in attendance 65 mins. per week.



HOUSE No. 16

Heating Magazine boiler (c), radiators (a) on inner walls.

Water Heating As above, 40-gal. cylinder.

Cooking Electric cooker (d).

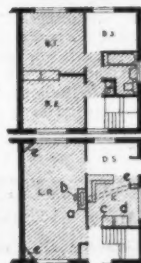
Capital cost £190

Annual fuel cost £24

Average temperature of rooms during heating season Living room.. 62.4° F. Bedrooms .. 56.6° F.

Spot temperature with outside temperature 30° F. during cold spell Living room.. 63.0° F. Bedrooms .. 54.0° F.

Labour expended in attendance 70 mins. per week.



which is combined with the storage vessel. This appears to be of similar efficiency to the ordinary domestic boiler, but is very simple to install.

Finally, one of the houses has background heating supplied by a normal low pressure hot water heating system, with radiators under the windows, supplied by a small cast iron sectional boiler, which also provides the hot water by means of a calorifier. Although this is shown solely as background heating, only £1 p.a. was spent on topping up; it may therefore be compared closely with the systems designed to provide whole house heating.

These systems have as their basis one of the new small solid fuel magazine boilers, which recently have become available. They are of welded steel construction, and have full thermostatic control, and the efficiency is high, being 70 per cent. or more, against some 60 per cent. for the normal small sectional boiler of good design properly attended. This is well shown in the case of two of the installations under review: the first, that which has just been mentioned employing the sectional boiler; the second, of similar design and slightly larger capacity to provide full instead of background heating, being fitted with the magazine boiler. The first showed a consumption of 10,800 lb. of fuel, for all-the-year domestic water heating, and winter warming; the latter, only 8,400 lb., representing a whole ton saved, costing at least £4. On this showing the sum spent on the higher cost of the latter boiler seems very well invested.

Experience has shown that, for small heating systems in buildings where the glass area is not excessive, a more compact and efficient arrangement is obtained by placing the radiators on inner walls, grouped as closely as possible. It has not been found that undue draughts result from such a scheme. It is interesting, therefore, to notice that such a scheme was included in the trials, and that it confirmed that a slightly lower installation cost and fuel cost resulted, with an average room temperature slightly higher, than when the radiators were placed under the windows.

All three of the foregoing installations are fitted with independent thermostatic control for the heating system, consisting of a solenoid-operated valve, operated by a room thermostat. This is unusual in a small system, on the score of expense; but it is most desirable, and is without doubt a factor in achieving the high efficiency shown in the whole house heating systems.

The final system to be considered is of particular interest; it makes use of the inter-floor space as a channel for warmed air, which thus provides low-temperature radiation from the floor above, and from the ceiling below. The air is warmed by a large radiator of normal type, placed in the main ascending duct. This radiator is, in turn, warmed by a boiler of the type used in the preceding systems, thus a direct comparison between the two is possible. This appears to show up the panel system at a disadvantage, for though some topping-up heat was used, average room temperatures were still lower than with the radiator system, whilst boiler

HOUSE No. 19

Heating Magazine boiler (c), heating radiator (a) in warm air chamber. Air circulates by gravity through ducts (e) and 1st floor cavities to give ceiling and floor panel heating effect (Hatched).

Water Heating From boiler, 40-gal. calorifier.

Cooking Electric cooker (d).

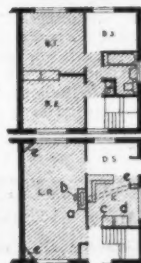
Capital cost £205

Annual fuel cost £26

Average temperature of rooms during heating season Living room.. 61° F. Bedrooms .. 54.2° F.

Spot temperature with outside temperature 30° F. during cold spell Living room.. 58° F. Bedrooms .. 48.5° F.

Labour expended in attendance 65 mins. per week.



fuel consumption was the same. Nevertheless, it is generally considered that appreciably lower temperatures provide comfort in rooms with low temperature panel warming than with convected heat, and it is possible that this may be the case here. It is in any case a laudable attempt to provide this very pleasant form of heating at a cost comparable with that of conventional systems.

A point worth remarking is the very small expenditure of time required for attending these small magazine boilers; it averages no more than 10 minutes a day.

A further interesting point in connection with these installations is that the heat output of the boilers as installed showed a gain of some 10 per cent. over the test-bench efficiency. This is because the flues are internal, and some of the heat of the gases is transmitted to the house; there is a moral here, that, wherever possible, flues should be placed on inner walls.

There is no doubt that, of the systems at present available, the low-pressure hot water scheme, with magazine boiler, provides the best ratio of comfort to fuel consumed, and that it also provides an economical means of domestic hot water supply. It must not, however, be assumed that other types of apparatus of no less efficiency and, possibly, of lower cost, may not become available in the future.

The information obtained from the BRS trials must be of greatest value in such developments and further reports on the progress of the trials will be awaited with very great interest.

The following fuel prices are those upon which annual running costs were calculated:

Electricity: 1s. a week + 3d. a unit.

Gas: 1s. a week + 11d. a therm.

Gas, houses 9, 20, 22, 31, 33, 34: 2d. a week + 1s. 3d. a therm.

Coal: 90s. 4d. a ton.

Coal, kitchen nuts: 85s. 10d. a ton.

Coke: 92s. 8d. a ton.

Anthracite, French nuts: 123s. 9d. a ton.

Anthracite, boiler nuts: 110s. 1d. a ton.

Anthracite, beans: 116s. 1d. a ton.

ben), 1; and Foreign Visitors (Mr. J. Croston), Extension 5.

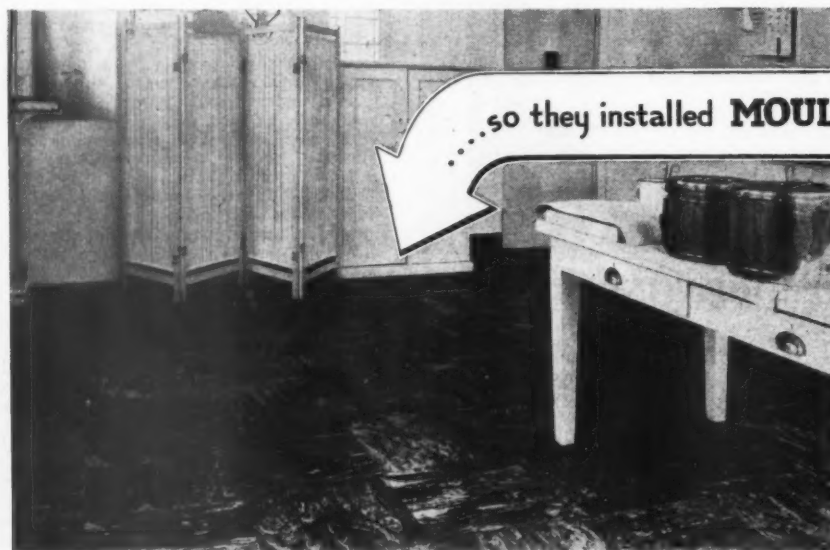
Buildings Illustrated

Housing at Monks Park Estate, Coventry (pages 507-513). Architect: D. E. E. Gibson, M.A., A.R.I.B.A., A.M.T.P.I., Coventry City Architect. General Contractors: T. Dalton; Johns Ltd.; H. L. Bates; A. Ward; F. Hocking; Housing Maintenance Dept.; C. U. C. Clifford; Allsmith; G. A. Johnson; A. Jervis; Hall Bros.; T. Seal & Son; W. J. Parker; A. F. Alsop; A. E. Simmons; H. B. Randle; K. B. Benfield; Breeze & Burdett; F. Bratby & Son; Mrs. L. Harris; W. Mead; L. Colman; A. H. Lane; W. H. Jones & Son. Sub-contractors: Asphalt, Highways Construction Ltd.; bricks, London Brick Co. Ltd., Longford Brick Tile Co. Ltd., Blockleys Ltd., Haunchwood Brick Tile Co. Ltd., Whittick Colliery Ltd.; structural steel, Matterson Huxley & Watson Ltd.; tiles, Marley Tile Co. Ltd., Igham Tile Co.; special roofings, Standard Flat Roofing Co. Ltd., Turners Asbestos Cement Co. Ltd.; glass, J. Chambers, Lenscrete Ltd.; stoves, Belpar Foundry Co.; grates, Newton Chambers Co., Metro-coke Grate Co.; Eagle Range Grate Co.; gas fixtures, Ascot Water Heaters Ltd.; gas fitting, Coventry City Gas Dept.; electric wiring, J. Orton (Elect.) Ltd., J. Patrick; ventilation, Greenwood & Airvac Ventilating Co. Ltd.; case-ments, Midland Joinery Works Ltd.; iron staircases, Bayliss, Jones & Bayliss; shrubs and trees, Coventry Parks Dept.; water supply, Coventry Water Dept.

Announcements

The Directors of the Midland Bank announce that Mr. Douglas William Turner, J.P., has been elected a member of their board and of the board of the Midland Bank Executor and Trustee Company. Mr. Turner is Chairman and Managing Director of four companies, Wellington Tube Works, Edward Smith, Job Edwards and Victoria Tube. He is also a director of Assam Railways and Trading, Henry Pooley & Son, Parnall & Sons, Rollason Wire, W. & T. Avery and Wrights' Ropes, and has for more than 20 years been a governor of the Blue Coat School.

The Information Section of the Department of Scientific and Industrial Research has moved to Lower Regent Street. For the time being the remainder of the headquarters of the department will remain at 24, Rutland Gate, London, S.W.7. The new address of the Information Section is: The Department of Scientific and Industrial Research, Rex House, Regent Street, London, S.W.1. The telephone number is Whitehall 9788. Extension numbers are: Chief Information Officer (Mr. Walter Hingston), Extension 7; Press (Mr. R. C. Herbert), 8; Exhibitions (Mr. A. A. Morris), 3; Films (Mr. B. Hog-



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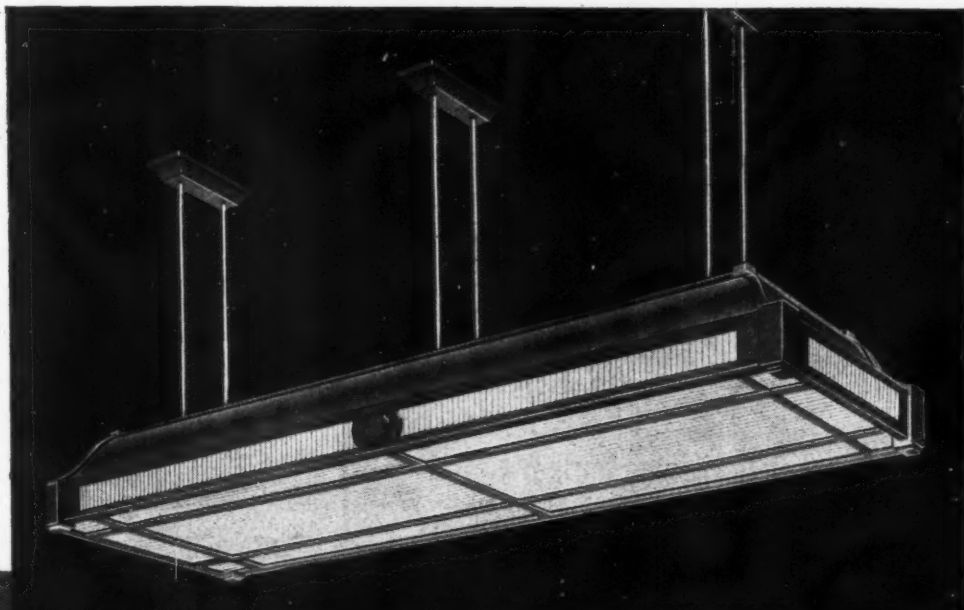
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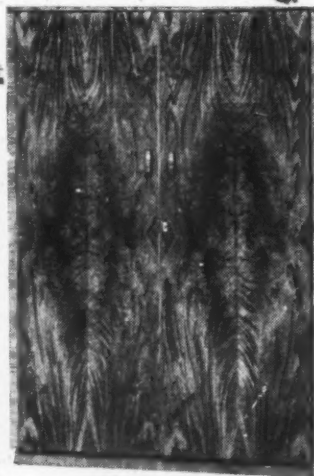
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December is balance month. The last few days of the year make heavy demands upon the staff of the bank, for every account is "balanced" and checked. Modern office methods, involving the use of mechanised book-keeping systems and of photographic records in accountancy, have reduced the time spent in searching for the proverbially elusive penny, but even so, hard work by every officer is required at "balance time". You will soon have an opportunity of studying the balance sheet of the Midland Bank; it is clothed in conventional form, but behind its figures lies the story of great achievements for customers large and small.

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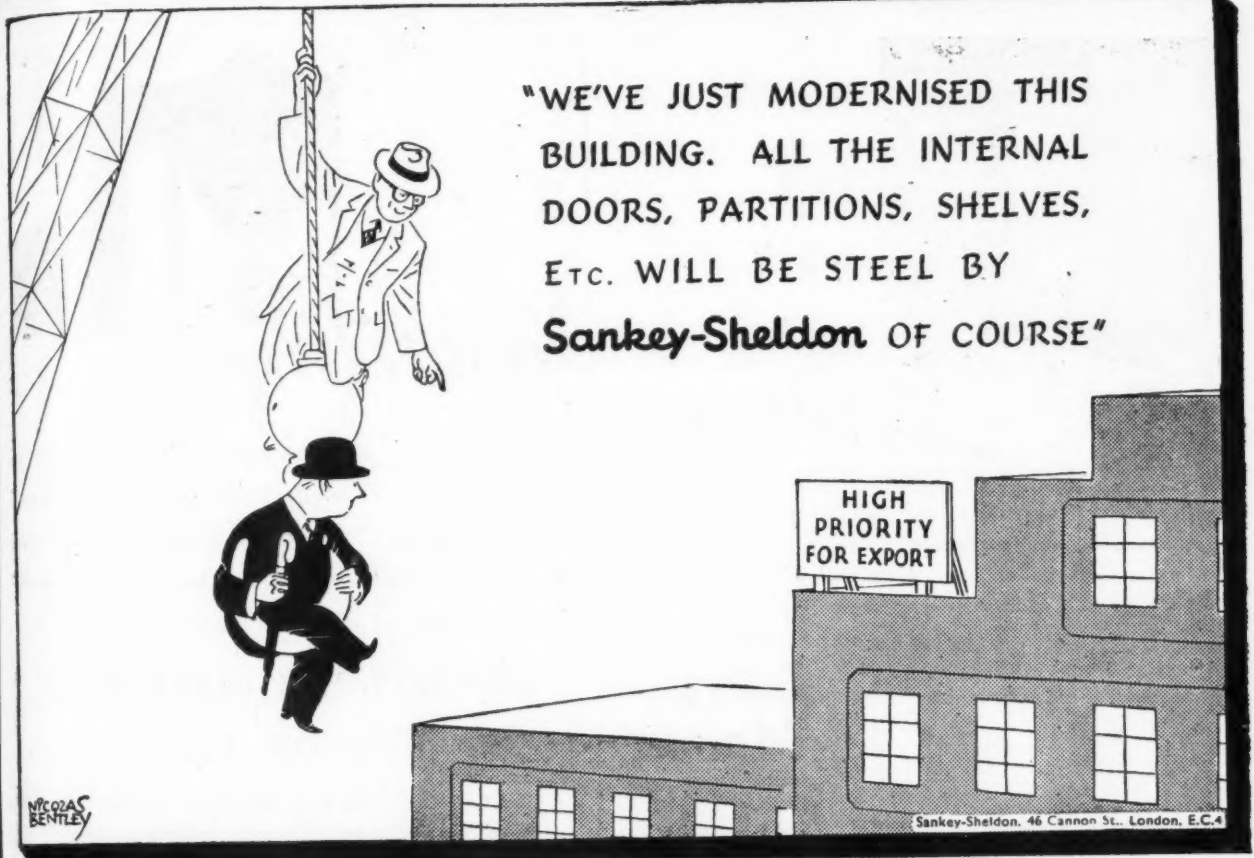
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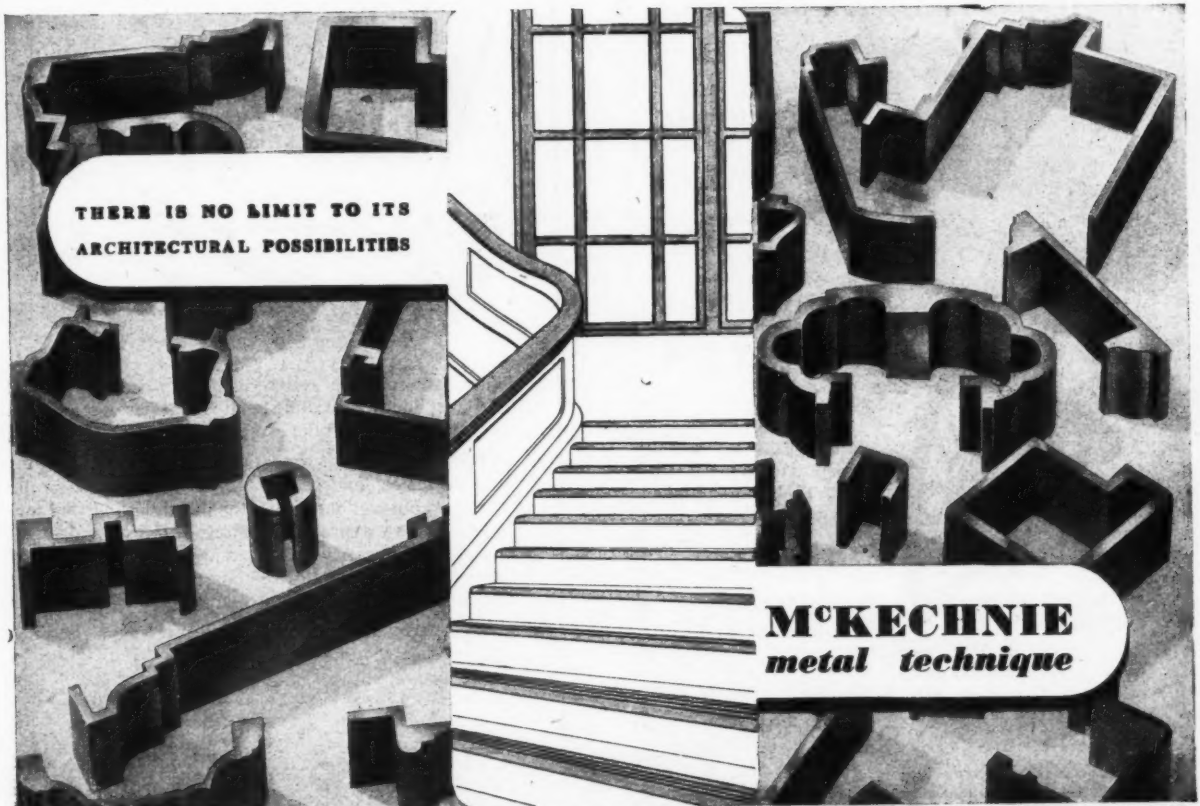
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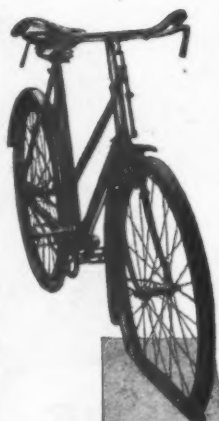
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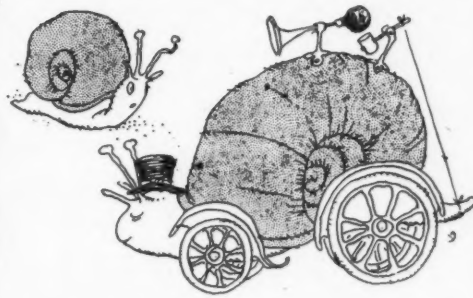
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Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

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THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. Address: **EMPLOYMENT REGISTER, WREN PARK, WYTHELEAF, Tel.: Uplands 0935, 991**

LONDON COUNTY COUNCIL. HOUSING AND VALUATION DEPARTMENT. ARCHITECTURAL ASSISTANTS. Applications are invited for positions of Architectural Assistant, at salaries of up to £580 a year. Commencing salaries will be determined according to qualifications and experience, and qualified candidates will be eligible for appointment to the permanent staff of the Department on the occurrence of vacancies. Engagement will involve Superannuation contributions at the rate of 6 per cent. of salary.

Successful candidates will be required to undertake the design, layout, and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed foolscap envelope required). Canvassing disqualified. (870). 1032

LANCASHIRE COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT. Applications are invited for the following appointment on the permanent staff:

SENIOR ASSISTANT LAND SURVEYORS AND VALUERS. Grade VI. Salary £595-£660 per annum. Candidates must be Associates of the Royal Institution of Chartered Surveyors (Valuation Division).

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937; to a satisfactory medical examination, and to the termination of each appointment by one month's notice in writing on either side.

Applications should be forwarded on the forms to be obtained from the County Architect, G. Noel Hill, F.R.I.B.A., M.T.P.I., County Offices, Preston, to whom they should be returned, accompanied by copies of three recent testimonials, to arrive not later than Saturday, 11th December.

R. H. ADCOCK, Clerk of the County Council.

County Offices, Preston. 16th November, 1948. 892

BINGLEY URBAN DISTRICT COUNCIL. SURVEYOR AND ARCHITECT'S DEPT. APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant, at a salary in accordance with Grade II of the A.P.T. Division of the National Scale of Salaries, i.e., £420×£15 to £465 per annum.

Candidates should have experience in housing design, development and general architectural work. Preference will be given to candidates who have passed some portion of the examination qualifying for A.R.I.B.A.

The appointment will be terminable by one month's notice on either side, and subject to the provisions of the Local Government Superannuation Act, 1937.

It will not be possible to provide housing accommodation for the successful applicant.

Applications, stating age, qualifications, training and experience, and details of past and present appointments, accompanied by copies of three recent testimonials, should be forwarded, endorsed "Architectural Assistant," to the undersigned before the 12th December, 1948.

F. M. DUNWELL, Clerk of the Council.

Town Hall, Bingley. 863

BRIERLEY HILL URBAN DISTRICT COUNCIL. APPOINTMENT OF SECOND ASSISTANT ARCHITECT.

Applications are invited from suitably qualified persons for the appointment of Second Assistant Architect, in the Architect and Housing Director's Department, at a salary in accordance with Grade VA of the A.P.T. Division (£550×£90 to £610 per annum) of the National Scales of Salaries.

Candidates should be experienced in general Municipal work, including housing, be capable of preparing plans and specifications, etc., and supervising construction.

Applications, endorsed "Second Assistant Architect," stating age, full details of qualifications and experience, and accompanied by copies of not more than three recent testimonials, must reach the undersigned not later than Monday, 6th December, 1948.

HERBERT HEX, Clerk of the Council.

Council Offices, Moor Street, Brierley Hill. 22nd November, 1948. 941

BOROUGH OF HESTON AND ISLEWORTH. ENGINEER AND SURVEYOR'S DEPARTMENT.

APPOINTMENT OF TWO GENERAL ARCHITECTURAL ASSISTANTS.

Applications are invited for the appointment of two Architectural Assistants, in the Borough Engineer and Surveyor's Department, at a salary in accordance with Grade III of the A.P.T. Division of the National Scale, viz., £450-£495 per annum, plus London weighting.

Candidates should have good architectural experience and should have passed the Intermediate examination qualifying for Associate Membership of the Royal Institute of British Architects. Preference will be given to candidates who have had experience in the preparation of working and detailed drawings in connection with housing and other Local Government work.

The appointments are permanent ones, subject to the National Scheme of Conditions of Service, and forms of application may be obtained from the Borough Engineer and Surveyor, 88, Lampton Road, Hounslow, Middlesex, by sending a stamped, addressed envelope. Applications on the forms provided, endorsed "General Architectural Assistant," should be delivered to the Borough Engineer and Surveyor not later than noon on 20th December, 1948.

HAROLD SWANN, Town Clerk. 949

CARDIGANSHIRE COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:

(a) ASSISTANT ARCHITECT. Salary, Grade A.P.T. VI. (£595×£20-£660).

(b) ARCHITECTURAL ASSISTANT. Salary, Grade A.P.T. II (£420×£15-£465).

(c) QUANTITY SURVEYOR. Salary, Grade A.P.T. VIII (£685×£25-£760).

The appointments will be terminable by one month's notice on either side, and will be subject to the Local Government Superannuation Act, 1937. The successful candidates will be required to pass a medical examination.

Candidates for (a) should be Associates of the R.I.B.A. and should have recent experience in the design and construction of educational buildings.

Candidates for (b) should preferably have passed the Intermediate examination of the R.I.B.A. and have good general experience in architectural work, preferably with a Local Authority.

Candidates for (c) should be Associates of the Royal Institution of Chartered Surveyors (Quantity Section), and be experienced in the preparation of Bills of Quantities, Estimates, Specifications, Measuring for Interim and Final certificates and settling Final Accounts.

Applications, suitably endorsed, stating age, qualifications, experience, previous appointments, present appointment and salary, accompanied by two recent testimonials, and giving the name of one referee, should be delivered to the undersigned not later than Saturday, the 18th December, 1948.

IVOR EVANS, Clerk of the Council.

County Council Offices, Aberystwyth. 18th November, 1948. 914

FLINTSHIRE COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments in the County Architect's Department:

(a) QUANTITY SURVEYORS (two vacancies). Salary A.P.T. VI, £595, rising to £660 p.a., consolidated.

(b) ASSISTANT ARCHITECT. Salary A.P.T. V, £520, rising to £570 p.a., consolidated.

(c) ASSISTANT ARCHITECTS (two vacancies). Salary A.P.T. IV, £480, rising to £525 p.a., consolidated.

Applicants for (a) must be Members of the Royal Institution of Chartered Surveyors (Quantity), and must be capable of preparing bills of quantities, estimates, measuring up and dealing with contractors' accounts for large contracts.

Applicants for (c) should be Registered Architects and Associate Members of the Royal Institute of British Architects, or possess similar qualifications, and should have had adequate professional experience in the preparation of Surveys, Designs, Specifications and construction of modern buildings, particularly school buildings.

Applicants for (b) should be Registered Architects, preferably Members of the Royal Institute of British Architects, or possess similar qualifications, and should have had adequate professional experience of the preparation of Surveys, Plans and details for schools or other buildings dealt with by Local Authorities, and have a sound knowledge of design, construction and specifications.

The appointments will be subject to (a) the National Scheme of Conditions of Service, as modified by the County Council; (b) the provisions of the Local Government Superannuation Act, 1937, and (c) a satisfactory medical examination.

Applications will be considered from registered disabled persons.

Applications on forms to be obtained from the undersigned, accompanied by copy of one recent testimonial and the names and addresses of two other persons willing to supply further testimonials, are to be returned so as to be received not later than the 20th December, 1948.

W. HUGH JONES, Clerk of the County Council.

County Buildings, Mold. 22nd November, 1948. 946

RURAL DISTRICT COUNCIL OF PONTARDAWE.

APPOINTMENT OF PERMANENT ARCHITECTURAL OR ENGINEERING ASSISTANT.

Applications are invited for the appointment of Permanent Architectural or Engineering Assistant, in A.P.T. Division, Grade II, National Scale, £420-£465.

Candidates must be competent surveyors and practical draughtsmen. Preference will be given to an applicant who has had experience in the development of Housing Estates, and has passed the Intermediate examination of a recognized Professional Institution.

The appointment is permanent and is subject to the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications, previous experience and present appointment, accompanied by two recent testimonials, are to be sent to the undersigned not later than Monday, the 6th December, 1948.

BRYAN H. WILLIAMS, Clerk to the Council.

Council Offices, Pontardawe. 23rd November, 1948. 950

SALOP COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments to Established posts in the Department:

(1) SENIOR ASSISTANT QUANTITY SURVEYOR, on A.P.T. Grades IV and V (£480 to £570 per annum). Applicants must have had considerable experience in the preparation of Bills of Quantities, estimated costs, measurement on site, and the settlement of final accounts.

(2) SENIOR ASSISTANT ENGINEER, on A.P.T. Grades IV and V (£480 to £570 per annum). Applicants must be experienced in the design and preparation of schemes for central heating and hot water supply installations.

The appointments will be subject to one month's notice in writing on either side; to the terms of the National Joint Council's Scheme of Conditions of Service, and to the provisions of the Local Government Superannuation Act, 1937. Successful applicants will be required to pass a medical examination.

Forms of application may be obtained from the County Architect, Mr. A. G. Chant, F.R.I.B.A., 5, Belmont, Shrewsbury, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than 10 a.m. on Saturday, 11th December, 1948.

G. C. GODFREY, Clerk of the Council.

Shrewsbury. November, 1948. 874

NEWCASTLE-UPON-TYNE REGIONAL HOSPITAL BOARD.

Applications are invited for the permanent appointment of SENIOR QUANTITY SURVEYOR, on the Headquarters Staff of the Board. Candidates must be Members of the Royal Institution of Chartered Surveyors, and should have had wide experience of the preparation of Estimates, Specifications and Bills of Quantities, of measuring variations, and of the checking of final accounts. Salary will be £750×£25-£850 per annum.

Applications, marked "Senior Surveyor," should state:

- (1) Name and address.
- (2) Age, whether married.
- (3) Professional qualification.
- (4) Past appointments.
- (5) Present appointment and salary.
- (6) Experience.
- (7) War service.

(8) Date available if appointed. Names and addresses of three referees should be given, and applications should be received not later than 22nd December, 1948, addressed to the Secretary to the Board, "Dunira," Osborne Road, Newcastle-upon-Tyne, 2. 944

COUNTY COUNCIL OF DURHAM. COUNTY PLANNING DEPARTMENT.

Applications are invited from suitably qualified persons for the following permanent appointments:

(a) FIVE ASSISTANT AREA PLANNING OFFICERS. Grade VA, A.P.T. (£550-£610).

(b) TWO PLANNING ASSISTANTS. Grade V, A.P.T. (£520-£570).

(c) THREE JUNIOR PLANNING ASSISTANTS. Grade I, Miscellaneous Division (£315-£360).

Previous planning experience will be essential for posts (a) and (b) and will be an advantage for post (c).

The appointments are subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination by the Council's Medical Officer. The appointments will be terminable by one calendar month's notice on either side.

Canvassing, either directly or indirectly, will disqualify. Applicants must disclose in writing whether to their knowledge they are related to any member or to the holder of any senior office under the Council.

Applications, stating age and giving full particulars of qualifications and experience and the names of two persons to whom reference may be made, must be delivered to the County Planning Officer, 10, Church Street, Durham, not later than Wednesday, 15th December, 1948.

J. K. HOPE, Clerk of the County Council.

Shire Hall, Durham. 966

COUNTY OF LEICESTER.
COUNTY ARCHITECT'S DEPARTMENT.
Applications are invited for the following established posts in the County Architect's Department:

(a) **SENIOR ASSISTANT ARCHITECTS.** A.P.T. Grade VI/VII. Salary £595-£660/£635-£710.

(b) **ASSISTANT ARCHITECTS.** A.P.T. Grade V. Salary £520-£570.

(c) **ASSISTANT ARCHITECTS.** A.P.T. Grade IV. Salary £480-£520.

(d) **ARCHITECTURAL ASSISTANTS.** A.P.T. Grade III. Salary £450-£495.

(e) **ENGINEERING ASSISTANT (ELECTRICAL).** Grade VI. Salary £595-£660.

(f) **ENGINEERING ASSISTANT (HEATING).** Grade VI. Salary £595-£660.

(g) **QUANTITY SURVEYOR AND ESTIMATING CLERK.** Grade VI. Salary £595-£660.

Candidates for appointments (a) and (b) must be registered architects, and preference will be given to Associate Members of the R.I.B.A. who have had good experience in the design and construction of modern buildings.

Candidates for appointments (c) and (d) should be experienced in the preparation of surveys and working drawings, and preference will be given to Students of the R.I.B.A.

Candidates for appointment (e) must be Corporate Members of the Institution of Electrical Engineers, and should be experienced in the preparation of schemes and specifications for electrical installations for all types of County buildings, and the testing of existing installations.

Candidates for appointment (f) must be Corporate Members of the Institution of Heating and Ventilating Engineers, and should be experienced in the design and specification of modern heating, hot water and ventilating systems, and the testing of existing installations.

Candidates for appointments (g) should be experienced in the preparation of complete bills of quantities, specifications, preliminary estimates, and statements of interim and final accounts, including valuations for certificates.

The appointments will be subject to the National Scheme of Conditions of Service and to the provisions of the Local Government Superannuation Act, 1937, and to a satisfactory medical examination.

Applications must be made on the forms to be obtained from the County Architect, T. A. Collins, A.R.I.B.A., County Offices, Grey Friars, Leicester, to whom they should be returned, accompanied by copies of three recent testimonials, not later than 31st December, 1948.

JOHN A. CHATTERTON,
Clerk of the County Council.
Grey Friars, Leicester. 923

TARVIN RURAL DISTRICT COUNCIL.
ARCHITECTURAL ASSISTANT.
Applications are invited for the appointment of Architectural Assistant in the Office of the Engineer and Surveyor.

Applicants must have had sound training by pupillage and had previous experience in design and construction of building works, particularly in relation to housing. Preference will be given to persons qualified by the examination of the R.I.B.A.

The salary will be in accordance with Grade II (Technical Division) of the National Joint Council Scheme, viz., £420 x £15-£465.

The appointment will be subject to one month's notice in writing on either side, to the provisions of the Local Government Superannuation Act, 1937, and to the selected candidate passing satisfactorily a medical examination.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be addressed to Mr. Thomas Pritchard, M.I.Mun.E., and enclosed in an envelope endorsed "Architectural Assistant," and should reach this office not later than Saturday, the 15th December, 1948.

(Sgd.) **J. H. MOORE DUTTON,**
Clerk to the Council.
Westminster Buildings, Newgate Street, Chester.

24th November, 1948. 994

COUNTY BOROUGH OF DERRY.

BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments on the permanent staff in accordance with the National Scale of Salaries:

(1) **ONE ASSISTANT ARCHITECT.** Grade VI, A.P. and T. Division. Salary £595-£660.

Applicants should be Associate R.I.B.A., with a good knowledge of work undertaken by a Local Authority.

(2) **ONE ASSISTANT ARCHITECT.** Grade IV, A.P. and T. Division. Salary £480-£525.

Applicants should have passed the Intermediate examination of the R.I.B.A., and have had good architectural experience.

The appointments will be subject to one month's notice in writing on either side, and to the terms of the National Joint Council's Scheme of Conditions of Service, and the provisions of the Local Government Superannuation Act, 1937, and the successful applicants will be required to pass a medical examination.

Form of application may be obtained from Thos. W. East, F.R.I.B.A., Borough Architect, The Council House, Corporation Street, Derby, and should be returned when completed, together with copies of two testimonials, to arrive not later than Tuesday, 21st December, 1948.

Canvassing, directly or indirectly, will be a disqualification.

C. ASHTON,

Town Clerk.

The Council House, Derby. 982

BURGH OF KILMARNOCK.
BURGH ARCHITECT AND TOWN PLANNING OFFICER'S DEPARTMENT.

Applications are invited for the following appointments in:

(1) **BURGH ARCHITECT'S DEPARTMENT.**

ASSISTANT ARCHITECT. Salary Grade A.P.T., V (£320 x £15 to £370, including war bonus).

(2) **TOWN PLANNING DEPARTMENT.**

PLANNING ASSISTANT. Salary Grade A.P.T., III (£450 x £15 to £495, including war bonus).

Applicants for appointment as Assistant Architect should have a professional qualification and previous Municipal and housing experience.

Applicants for appointment as Planning Assistant should have previous experience in a Planning Department and additional architectural or surveying experience.

Applicants must not exceed 45 years of age unless already contributory employees under the Local Government and Other Officers' Superannuation (Scotland) Act, 1937. War service may be deducted from present age to satisfy this condition.

The persons selected for appointment will be required to pass a medical examination, and on satisfying this condition will become contributory employees under the above-mentioned Act.

Applications, accompanied by one copy of each of three recent testimonials, stating age, qualifications and experience, and for which post application is made, should be lodged with the Burgh Architect and Town Planning Officer, 11, London Road, Kilmarnock, not later than 10 a.m. on Monday, 13th December, 1948.

W. L. WALKER,

Town Clerk.

Council Chambers, Kilmarnock. 969

27th November, 1948.

RUTLAND COUNTY COUNCIL.
COUNTY PLANNING COMMITTEE.
PLANNING ASSISTANT.

Applications are invited for a Planning Assistant, for the department of the County Planning Officer.

The salary will be Grade I of the Miscellaneous Division of the National Joint Council Scales (£330 x £15).

Applicants should have had experience in the offices of a Local Planning Authority, and Surveying, Civil Engineering, or Architectural experience would be an advantage.

Applications, accompanied by copies of three recent testimonials, should be addressed to the County Planning Officer, Catmose, Oakham, Rutland, and should reach him by not later than Monday, 20th December, 1948.

R. C. DALTON,

Clerk of the County Council.

County Offices, Catmose, Oakham, Rutland. 923

COUNTY OF LINCOLN—PARTS OF

LINDSEY.

COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of a **PLANNING ASSISTANT**, Grade A.P.T., IV, £480 x £15-£525 per annum, on the divisional staff at headquarters in Lincoln.

Candidates should have reached at least Intermediate standard of the Town Planning Institute or other recognized professional institute, and have had some years of experience in statutory planning, after a basic training in architecture or surveying.

The appointment is subject to the Local Government Superannuation Act, 1937, to the passing of a medical examination, and to the National Scheme of Conditions of Service as adopted by the County Council. The person appointed will be required to maintain a capital maintenance allowance.

Applicants, stating age, qualifications, and previous experience, together with one testimonial and the names and addresses of two referees, must be forwarded to the County Planning Officer, The Castle, Lincoln, not later than 15th December, 1948.

H. COPLAND,

Clerk of the County Council.

County Offices, Newland, Lincoln. 960

TUNBRIDGE WELLS GROUP HOSPITAL

MANAGEMENT COMMITTEE.

Applications are invited for the post of **HOSPITAL BUILDINGS SURVEYOR**. The post involves responsibility under the direction of the Secretary for the maintenance of the fabric of Hospitals and Clinics controlled by the Management Committee, and includes the preparation of plans and specifications for minor structural adaptations, all building repairs and responsibility for the supervision of hospital maintenance staffs. Commencing salary within Grade VI, according to experience (£595 per annum x £20 x £20 x £25 to £660).

Applications, stating age, qualifications and experience together with names of two referees, should be forwarded as soon as possible to the undersigned.

E. A. WAGSTAFF,

Secretary.

Sherwood Park, Pembury Road, Tunbridge Wells. 965

METROPOLITAN BOROUGH OF

WANDSWORTH.

ARCHITECTURAL ASSISTANTS.

Applications are invited for two established appointments as Architectural Assistants, in the Borough Architect's Department, at a salary in accordance with Grade A.P.T., VII (£665-£740 per annum inclusive).

Candidates should be fully experienced in the design and planning of housing estates, particularly multi-storey blocks of flats and/or other framed buildings and in supervising their erection. Preference will be given to Associates of the R.I.B.A.

Forms of application may be obtained from the Borough Architect, and must be returned to the undersigned not later than 18th December, 1948.

By Order,

R. H. JERMAN,

Town Clerk.

Municipal Buildings, Wandsworth, S.W.18. 981

STEVENAGE DEVELOPMENT

CORPORATION.

Applications are invited for the following posts in the Department of Architecture and Planning (Chief Architect and Planner, Clifford Holliday, M.Arch., F.R.I.B.A., M.T.P.I.):—

Grade III. **ARCHITECTS.** Salary range £750-£1,000.

Grade IV. **ASSISTANT ARCHITECTS.** Salary scale £550 by £30-£750.

Grade IV. **ASSISTANT LANDSCAPE ARCHITECT.** Salary scale £550 by £30-£750.

Grade IV. **ASSISTANT PLANNER.** Salary scale £550 by £30-£750.

Preference will be given to candidates with a University degree or diploma in Architecture and/or Town Planning or Landscape Architecture.

Selected candidates will be required to contribute to a Local Government Superannuation Fund or an Insurance Scheme.

Relationship to any member of the Corporation or staff must be disclosed by applicants.

Canvassing, directly or indirectly, of members or staff of the Corporation will constitute an absolute disqualification.

Forms of application may be obtained from the Chief Administrative Officer, Stevenage Development Corporation, Aston House, Aston, near Stevenage, and should be returned not later than 18th December, 1948.

T. B. BOWEN,

Town Clerk.

Guildhall, Swansea. 953

BOROUGH OF CHELTENHAM. BOROUGH ENGINEER'S DEPARTMENT. APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the appointment of Architectural Assistants at salaries in accordance with the following grades, and subject also to Scheme and Conditions of Service of the National Joint Council for Local Authorities:—
(a) Permanent, Grade III, A.P. and T. Division (£450 p.a., rising to £496 p.a.).
(b) Temporary, Grade A Class I (£316 5s. p.a., rising to £345, plus £59 16s. bonus).

Candidates must have been regularly trained. Applicants for appointment (a) should be Registered Architects, preferably students of the R.I.B.A., and able to deal with the work normally carried out by a Local Authority. They should, further, be accurate draughtsmen and able to carry through works involving design and the writing of specifications, and should have a knowledge of Municipal housing.

Applicants for appointment (b) should have completed Articles, be competent draughtsmen, and able to assist generally with the work of the Department.

The successful candidates will be subject to one month's notice in writing on either side, and to the provisions of the Local Government Superannuation Acts. They will also be required to pass a medical examination.

Applications, stating age qualifications and details of previous experience, accompanied by copies of two recent testimonials, should be sent to G. Gould Marsland, B.Sc., M.Inst.C.E., Borough Engineer, Municipal Offices, Cheltenham, not later Monday, 13th December, 1948.

F. D. LITTLEWOOD
Town Clerk.

Municipal Offices, Cheltenham.
WR/ADM/R.
19th November, 1948. 967

COUNTY OF ESSEX. ILFORD COMMITTEE FOR EDUCATION.

The Essex County Council invite applications for TWO ARCHITECTURAL ASSISTANTS, as set out below, to work in the office of the Borough Engineer of Ilford, to deal with work for the Committee for Education.

ONE ARCHITECTURAL ASSISTANT. A.P.T. Division, Grade V. (Applicants should be Members of the Royal Institute of British Architects.)

ONE ARCHITECTURAL ASSISTANT. A.P.T. Division, Grade III. (Applicants should have had good general training and experience.)

Application must be made on a form to be obtained from the Borough Engineer and returned to him at the Town Hall, Ilford, together with copies of not more than three recent testimonials, within 14 days of the appearance of this advertisement. 934

HERTFORDSHIRE COUNTY COUNCIL. APPOINTMENT OF DEPUTY DIVISIONAL PLANNING OFFICER (TWO VACANCIES).

Applications are invited for the appointment of Deputy Divisional Planning Officer (two vacancies), at a salary of £685 per annum, rising by annual increments of £25 to £760 (Grade VIII, A.P.T.), together with travelling and subsistence allowances in accordance with the Council's scale.

Applicants should have had considerable experience in controlling development, and preference will be given to candidates with experience in controlling elevations by planning. Applicants must be Corporate Members of the Town Planning Institute and hold other professional qualifications.

Forms of application may be obtained from the County Planning Officer, County Hall, Hertford, and should be returned not later than the 20th December, 1948. 940

GOVERNMENT OF NORTHERN IRELAND. ARCHITECTS.

Applications are invited for the post of Architect in the Ministry of Health and Local Government. The appointment will be temporary, but so far as can be foreseen will last for several years. Remuneration: The salary will be within the range of £950-£1,100 per annum, and the commencing salary within this range will be fixed according to the qualifications and experience of the successful candidate.

Qualifications: Candidates should be not less than 30 years of age, and must be Fellows or Associates of the Royal Institute of British Architects or Registered Architects by examination, and have at least 10 years' practical experience. In addition they must either:—

(a) be Associate Members of the Town Planning Institute and be experienced in Town Planning work, or

(b) have a knowledge of modern hospital design and Public Health work and be thoroughly conversant with present-day materials, construction and costing.

The successful candidate will be placed in a position of responsibility, and administrative ability is therefore necessary. Preference will be given to candidates who served with H.M. Forces during the 1914-18 or 1939-45 war, providing the Ministry is satisfied that such candidates can, or within a reasonable time will be able to, discharge the duties efficiently.

Closing date for receipt of application: Applications must reach the Assistant Secretary (Establishments), Ministry of Finance, Stormont, Belfast, on or before the 16th December, 1948. Applicants should state date of birth, give full particulars of qualifications and experience, and enclose copies of two recent testimonials. 964

LONDON TRANSPORT EXECUTIVE.

Applications are invited for the following temporary appointments on the staff of the Architect:—

(a) ARCHITECTURAL ASSISTANTS. Fully qualified and experienced. Salary range £500-£560 per annum.

(b) GENERAL TECHNICAL ASSISTANTS. Passed Intermediate standard, with office experience. Salary range £215 to £445, according to age and qualifications.

Applications, giving full particulars of training and experience, to be addressed to the Staff Officer (E/EV.29), London Transport Executive, 55, Broadway, S.W.1. 1977

METROPOLITAN BOROUGH OF POPLAR. APPOINTMENT OF ARCHITECTURAL ASSISTANT (A.P.T., V).

Applications are invited from suitably qualified persons for the above-mentioned appointment, on the permanent establishment of the Borough Engineer and Surveyor's Department.

Full details of the appointment and form of application may be obtained from the Borough Engineer and Surveyor, Poplar Town Hall, Bow Road, E.3, to whom completed applications must be delivered not later than first post on Monday, 13th December, 1948. 931

CITY OF COVENTRY.

Applications are invited for the following whole-time appointments on the permanent staff of the City Architectural Department:—

(a) ONE ASSISTANT ARCHITECT, acting as Section Deputy. Salary on Grade A.P.T., Va, commencing at £550 per annum and rising to £610 per annum.

(b) ONE ASSISTANT ARCHITECT. Salary Grade A.P.T., V, commencing at £520 per annum and rising to £570 per annum.

Candidates for the above appointments should be Associate Members of the Royal Institute of British Architects, or hold equivalent qualifications.

(c) ONE ASSISTANT ARCHITECT. Salary Grade A.P.T., III, commencing at £450 per annum and rising to £495 per annum.

(d) ONE ASSISTANT ARCHITECT. Salary Grade A.P.T., I, commencing at £390 per annum and rising to £435 per annum.

(e) ONE QUANTITY SURVEYOR, acting as Section Deputy. Salary Grade A.P.T., VII, commencing at £635 per annum and rising to £710 per annum.

Candidates should be Professional Associates of the Royal Institute of Chartered Surveyors (Quantities Division).

Salary increments are subject to satisfactory service.

The posts are subject to one month's notice on either side, and to the provisions of the Local Government Superannuation Act, as amended in regard to annuities to widows by the Coventry Corporation Act, 1935, and a satisfactory certificate will be requisite from the Council's medical referee. The successful male applicants will be required to contribute to the Coventry Municipal Officers' Widows' and Orphans' Pension Fund.

Applications for all the above appointments must be made on the forms obtainable from the undersigned, and should be returned completed, together with copies of not more than two recent testimonials, or names of two persons to whom reference may be made, not later than Tuesday, 21st December, 1948.

Canvassing, directly or indirectly, will be a disqualification.

D. E. E. GIBSON,
City Architect.

14, Warwick Row, Coventry.
2nd December, 1948. 962

Applications are invited for the following full-time post in the Senior School of Hammersmith School of Building and Arts, any Crafts, Lime Grove, Shepherd's Bush, W.12, to commence as soon as possible: LECTURER IN BUILDING CONSTRUCTION and allied subjects, to act as "year master" in Architectural section. Applicants should hold A.R.I.B.A. or similar qualification, and have practical experience; teaching experience an advantage. Burnham scale salary, £300 × £15-£555, plus London allowance of £36 or £48 and, where applicable, allowances for approved graduate qualifications and training. Increments of £15 are added to the commencing salary for each year of approved industrial experience after the age of 21, to a maximum of 12 years, and for each year of full-time teaching experience. Application forms (stamped addressed foolscap envelope required) from the Principal at the School, returnable before 1st January, 1949 (2131). 938

CAMBRIDGESHIRE COUNTY COUNCIL. COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT, A.P.T., Grade I. Salary £390-£435 per annum.

Candidates must have a sound knowledge of design and construction, especially in residential buildings, and be able to prepare drawings from preliminary sketches.

The appointment will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and experience, accompanied by copies of two recent testimonials, should be sent to the Clerk of the County Council, Shire Hall, Cambridge, not later than 16th December, 1948.

CHARLES PHYTHIAN,
Clerk of the County Council.

Shire Hall, Castle Hill, Cambridge. 954

Amended Advertisement.

BOROUGH OF SOUTHALE. APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment on the permanent staff of the Corporation, at a salary in accordance with Grade A.P.T., V(a), of the National Scheme (£550-£610), plus appropriate London weighting.

Candidates must be Members of the Royal Institute of British Architects, and previous Local Government experience is desirable.

Housing accommodation will be made available in the case of a married applicant.

The appointment is subject to one month's notice on either side and to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

It is a condition of appointment that the successful applicant shall be a member of his appropriate trade union, professional organization, or other recognized body.

Applications, on forms to be obtained from the Borough Engineer, Town Hall, Southale, must be returned to him on or before Wednesday, 15th December, 1948.

Canvassing will disqualify.

J. S. SYRETT,
Town Clerk.

Town Clerk's Office, Southale. 963

DERBYSHIRE COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the under-mentioned appointments on the permanent staff.

Conditions of service and salaries are in accordance with the National Joint Council Scheme for Local Authorities, as adopted by the County Council.

(a) SENIOR ASSISTANT ARCHITECT. Grade VI. Salary £595-£660.

(b) ASSISTANT ARCHITECT. Grade IV. Salary £480-£525.

Applicants must possess an appropriate professional qualification, and should have had experience in the design and construction of modern buildings. Canvassing of members of the Council, directly or indirectly, will be a disqualification for appointment. The Council is not able to assist successful applicants in the provision of housing accommodation.

Applications to be made on a form to be obtained from the undersigned, to whom it must be returned, accompanied by copies of three recent testimonials, by 11th December, 1948.

Envelopes and applications must be endorsed, stating clearly the vacancy for which the application is made.

F. HAMER CROSSLEY, Dipl. Arch.,
A.R.I.B.A.,
County Architect.

2nd December, 1948. 961

DUNDEE COLLEGE OF ART SCHOOL OF ARCHITECTURE.

The Governors of the Dundee Institute of Art and Technology invite applications for the position of LECTURER AND STUDIO INSTRUCTOR.

Applicants should be Members of the R.I.B.A. and should preferably be holders of a degree or diploma of a recognized School of Architecture. Special experience in Constructional Subjects will be an additional qualification.

Salary scales: Men, £450 by £15 to £685; women, £400 by £15 to £575, with placing according to qualifications and experience.

Applications should be lodged as soon as possible and should be on the prescribed form, copies of which, with full particulars, may be obtained from the undersigned.

G. R. HALL,
Clerk and Treasurer.

Bell Street, Dundee.
25th November, 1948. 993

ESSEX EDUCATION COMMITTEE. MID-ESSEX TECHNICAL COLLEGE AND SCHOOL OF ART, CHELMSFORD.

Applications are invited from suitably qualified persons for the post of Full-time LECTURER IN ARCHITECTURE, as from 1st January, 1949, to assist in the instruction of Full-time Day and Evening Students preparing for the Inter. and Final examinations of the R.I.B.A.

Salary in accordance with the Assistants' Scale of the Burnham Further Education Report.

Further particulars may be obtained (stamped addressed foolscap envelope) from the Clerk to the Governors, Mid-Essex Technical College, Market Road, Chelmsford, to whom completed application forms should be returned as soon as possible.

B. E. LAWRENCE,
Chief Education Officer.

County Offices, Chelmsford. 942

BUCKS COUNTY COUNCIL.

The County Architect is seeking three fully qualified and experienced ASSISTANT ARCHITECTS, who possess a keen and energetic enthusiasm for their profession. Experience in a central or Local Government department is not essential, but candidates must have personal experience of all stages of large building contracts. These posts carry a salary of £685-£760 p.a.

A vacancy also exists for an ASSISTANT BUILDING SURVEYOR. Preference will be given to candidates who are qualified heating engineers. The salary offered is £595-£660 p.a.

Further particulars and forms of application may be obtained from the County Architect, County Offices, Aylesbury, to whom they must be delivered by 13th December, 1948.

GUY R. CROUCH,
Clerk of the County Council.

County Hall, Aylesbury.
November, 1948. 945

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments on the permanent staff:—
(a) ARCHITECTURAL or TECHNICAL ASSISTANT (FITTINGS). Salary range £595-£660 per annum. Candidates should have experience in the preparation of detailed working drawings and specifications for internal fixtures for new schools and county buildings.

(b) QUANTITY SURVEYOR (FITTINGS). Salary range £595-£660 per annum. Candidates should have experience in the preparation of estimates, specifications and schedules for internal fixtures for new schools and county buildings, and also in the preparation of bills of quantities for buildings of various types. Preference will be given to Associates of the Royal Institution of Chartered Surveyors.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, as amended by the West Riding County Council (General Powers) Act, 1948, and the successful applicants will be required to pass a medical examination. The appointments are also subject to termination by one month's notice in writing on either side.

Applications should be forwarded on forms obtainable from this office and returned, accompanied by copies of not more than three testimonials, not later than the 31st December, 1948.

HUBERT BENNETT, F.R.I.B.A.,
County Architect.
County Hall, Wakefield. 979

BOROUGH OF SLOUGH.

CLERK OF WORKS.

Applications are invited for the appointment of a Clerk of Works, at a salary of £3 per week. The appointment will not be within the permanent establishment, and the successful applicant will be required to assist the Council's Clerk of Works.

Applicants must have a thorough knowledge of all building trades, and should preferably have been engaged in connection with the erection of traditional and non-traditional houses. Applicants must be capable of supervising housing schemes and all works preparatory to, and during, housing construction in all stages. It is essential that applicants should be fully capable of taking off quantities and measuring up site works.

Applications, stating age, qualifications and previous experience, together with the names and addresses of two persons to whom reference may be made as to experience and ability, must reach the undersigned in sealed envelopes, endorsed "Clerk of Works," by not later than first post on Monday, 13th December, 1948.

Canvassing, directly or indirectly, will disqualify.

NORMAN T. BERRY,
Town Clerk.
Town Hall, Slough.
28th November, 1948. 943

LANCASHIRE COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments on the permanent staff:—

(a) SENIOR ASSISTANT ARCHITECTS. Grade VI. Salary £595-£660 per annum. Preference will be given to Members of the R.I.B.A.
(b) ASSISTANT QUANTITY SURVEYORS. Grade VI. Salary £595-£660 per annum. Preference will be given to Associates of the Royal Institution of Chartered Surveyors (Quantity Surveyors' Division).

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, to a satisfactory medical examination, and to the termination of each appointment by one month's notice in writing on either side.

Applications should be forwarded on the forms to be obtained from the County Architect, G. Noel Hill, F.R.I.B.A., M.T.P.I., County Offices, Preston, to whom they should be returned, accompanied by copies of three recent testimonials, to arrive not later than Saturday, 18th December.

R. H. ADCOCK,
Clerk of the County Council.
County Offices, Preston.
24th November, 1948. 960

BOROUGH OF ROYAL LEAMINGTON SPA.

DEPARTMENT OF DIRECTOR OF HOUSING.

APPOINTMENT OF CHIEF ASSISTANT ARCHITECT.

Applications are invited for the above appointment; the salary will be Grade V of the A.P. and T. Division, viz. £520 p.a.

The appointment will be on the unestablished staff of the Corporation, terminable by one calendar month's notice on either side. Candidates must be suitably qualified, and should have had a thorough training in design and construction, and be experienced in the preparation of sketch plans, working drawings and specifications, particularly in relation to flats, housing estates and buildings relating thereto. A knowledge of model making will be an advantage.

Applications, giving full particulars of experience, together with age, present position and salary, and copies of not more than three testimonials, must be posted to reach H. Fedeski, A.R.I.B.A., Dip.T.P., A.M.T.P.I., Director of Housing, 7, Regent Grove, Leamington Spa, on or before the 11th December, 1948.

JAMES N. STOTHERT,
Town Clerk.
Town Hall, Leamington Spa.
23rd November, 1948. 995

CITY OF LEEDS.

CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

(a) ASSISTANT ARCHITECTS. Consolidated salary scale, £595-£660.

(b) ASSISTANT ARCHITECTS. Consolidated salary scale, £480-£525.

(c) ASSISTANT ARCHITECTS. Consolidated salary scale, £450-£495.

(d) ASSISTANT ARCHITECTS. Consolidated salary scale, £450-£495.

(e) ASSISTANT ARCHITECTS. Consolidated salary scale, £390-£435.

(f) JUNIOR ASSISTANT ARCHITECT. Commencing salary according to age, maximum salary £385 (male) and £308 (female).

Candidates for appointments (a) to (d) must be Registered Architects, and must have had a thorough training and experience in architectural design and construction.

(g) ASSISTANT QUANTITY SURVEYOR. £520-£560.

(h) ASSISTANT QUANTITY SURVEYOR. £450-£525.

(j) ASSISTANT QUANTITY SURVEYOR. £450-£495.

Candidates must be qualified to prepare Bills of Quantities and finalise accounts for all classes of building works. Pre-war experience is essential. In each case the payment of salary increments will be subject to satisfactory service, and will be granted normally with effect from the 1st April following the completion of 6 months' service, except in the case of appointments (f) where birthday increments will be payable.

The appointments are subject to the Local Government Superannuation Act, 1937, and successful applicants will be required to pass a medical examination.

Applications on forms to be obtained from the undersigned, accompanied by copies of not more than three recent testimonials (not returnable) must be received by me, in the envelope supplied therefor, not later than 10 a.m. on Saturday, the 18th December, 1948.

Canvassing in any form, either directly or indirectly, will be a disqualification.

R. A. H. LIVETT, O.B.E., A.R.I.B.A.,
City Architect.
Priestley House, Quarry Hill, Leeds, 9. 1006

BOROUGH OF BEXLEY.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant, on the permanent staff in the Architectural Section of the Borough Engineer's Department. The salary will be in accordance with Grade A.P.T., III, of the National Scale of Salaries (£450 × £15-£495), plus London weighting.

Form of application, with Conditions of Appointment, may be obtained from the Borough Engineer and Surveyor, Council Offices, Bexleyheath, to whom completed applications must be returned by 20th December, 1948. Canvassing, directly or indirectly, will disqualify.

W. WOODWARD,
Town Clerk.
Council Offices, Bexleyheath, Kent. 1007

BOROUGH OF HESTON AND ISLEWORTH.

APPOINTMENT OF DRAUGHTSMAN.

Applications are invited for the appointment of Draughtsman, in the Town Planning Section of the Borough Engineer and Surveyor's Department, at a salary in accordance with Miscellaneous Division, Grade I, of the National Scale of Salaries (£315 × £15-£360 per annum), plus appropriate London weighting.

Applicants, male or female, must be capable and expeditious draughtsmen, and preference will be given to those with Town Planning experience. The appointment is a permanent one, and will be terminable by one month's notice on either side. The conditions of service will be those of the National Joint Council for Local Authorities' Administrative, Professional and Clerical Services.

Forms of application may be obtained from the Borough Surveyor, 88, Lampton Road, Hounslow, by sending a foolscap stamped addressed envelope. Applications on the forms provided, together with particulars of training and experience and names and addresses of three references, must reach the undersigned in an envelope endorsed "Draughtsman" not later than noon on the 20th December, 1948.

Canvassing will disqualify.
HAROLD SWANN,
Town Clerk.
Council House, Hounslow, Middlesex. 1006

HUNTS COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

APPOINTMENT OF ARCHITECTURAL ASSISTANT (GRADE V).

Applications are invited for the above-named appointment. Salary to be in accordance with Grade V of the A.P. and T. Division, £520 per annum, rising to £570 per annum.

The appointment will be subject to the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

The appointment is terminable by one month's notice on either side.

Applications, stating age, qualifications, experience, and date on which duties could be commenced if appointed, together with copies of two testimonials, should be sent to Mr. T. H. Longstaff, M.Inst.C.E., F.R.I.B.A., M.T.P.I., County Architect, Walden House, Huntingdon, by not later than Wednesday, 15th December, 1948.

JOHN KELLY,
Clerk of the County Council.
County Buildings, Huntingdon.
November, 1948. 1002

CITY OF SALFORD.

Applications are invited for the following appointments in the City Engineer's Department.

(1) ARCHITECTURAL ASSISTANT. Salary Grade VI, £595 to £660.

(2) ARCHITECTURAL ASSISTANT. Salary Grade V, £520-£570.

Candidates must be Associates of the Royal Institution of British Architects or hold an equivalent qualification, and should possess a sound experience in design and construction, and also be experienced in the management of building contracts.

The appointments will be subject to:—

(a) The Conditions of Service of the National Joint Council as adopted by the City Council.

(b) The Provisions of the Local Government Superannuation Act, 1937.

(c) The passing successfully of a medical examination.

Applications, stating age, qualifications and experience, together with particulars of past and present employment, accompanied by copies of two recent testimonials, should be forwarded in envelopes endorsed "Architectural Assistant," addressed to the City Engineer, Town Hall, Salford, 3, and be delivered not later than Monday, 20th December, 1948.

Applicants must disclose in writing whether or not they are related to any member of the Council or an Officer of the Authority.

H. H. TOMSON, Town Clerk.
1003

NORFOLK EDUCATION COMMITTEE.

Applications are invited for the post of SENIOR ARCHITECTURAL ASSISTANT, at a salary of £595 per annum, rising to a maximum of £660.

Applicants must be members of the R.I.B.A., or hold other suitable professional qualifications. Experience in school design will be an advantage.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, the successful candidate being required to pass a medical examination.

Form of application may be obtained from the undersigned on receipt of a stamped addressed envelope, and should be returned within 14 days of the date of this advertisement. All communications with regard to this matter should be marked "Architectural Assistant."

W. O. BELL,
Chief Education Officer.
County Offices, Thorpe Road, Norwich. 971

BRITISH ELECTRICITY AUTHORITY

(EASTERN DIVISION).

Applications are invited for the following Eastern Division appointments:—

TWO ASSISTANT ARCHITECTS. Salaries between £645-£720 p.a.

TWO ARCHITECTURAL ASSISTANTS. Salaries between £500-£625 p.a.

TWO STRUCTURAL ENGINEERING ASSISTANTS. Salaries between £550-£650 p.a.

Applicants for the Architectural vacancies should have some experience in the design and alteration of industrial buildings.

Applicants for the Structural Engineering vacancies must have experience in the design of structural steelwork and reinforced concrete structures.

Initial salaries will be in accordance with experience and qualifications.

Applications to be made in writing, stating age, experience, and salary required, to Divisional Controller, Eastern Division, British Electricity Authority, Northmet House, Southgate, N.14. CAS/KN.

26th November, 1948. 1004

Amended Advertisement.

BOROUGH OF MALDEN AND COOMBE.

BOROUGH ENGINEER'S DEPARTMENT.

APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Chief Architectural Assistant, on the permanent staff of the Borough Engineer's Department, at a salary of £660 per annum (Grade A.P.T., VI, maximum), plus London "weighting," and a car allowance, at present £70 per annum.

The appointment is subject to the Provisions of the National Scheme of Conditions of Service, terminable by one month's notice in writing on either side, and will be subject to the Provisions of the Local Government Superannuation Act, 1937, and to the successful candidate passing a medical examination.

Applicants must be Associates of the Royal Institution of British Architects, and have had Municipal administrative experience. They must possess sound experience in the preparation of drawings and specifications for the construction and maintenance of housing, public buildings, and other types of building work carried out by a Local Authority.

Applications, giving particulars of age, qualifications, experience, past and present appointments with salaries, accompanied by copies of not less than three recent testimonials, and endorsed "Chief Architectural Assistant," should be delivered to the undersigned not later than 20th December, 1948.

Canvassing, directly or indirectly, will be a disqualification, and applicants must disclose in writing whether to their knowledge they are related to any member or senior officer of the Council.

The Council will endeavour to provide the successful candidate with housing accommodation if deemed necessary.

HAROLD E. BARRETT,
Town Clerk.
Municipal Offices, New Malden, Surrey. 999

THE CRAWLEY DEVELOPMENT CORPORATION require a **MODEL MAKER**, on the Chief Architect's staff. Applicants must have had a good and varied experience in architectural and topographical model making and be able to translate drawings and develop all types of reproductions from small scales. Precision work will often be necessary; good draughtsmanship is essential. Applicants should state salary required and give particulars of age, education and experience. Applications, giving names of three persons from whom references may be obtained, should reach the Chief Architect, Mr. A. G. Sheppard Fidler, M.A., B.Arch., A.R.I.B.A., A.M.T.P.I., Broadfield, Crawley, Sussex, by 15th December, 1948.
C. A. C. TURNER, Chief Executive. 984

CITY OF CANTERBURY.
ARCHITECTURAL ASSISTANT.
Applications are invited for the appointment of Architectural Assistant, in the City Architect's Department, at a salary in accordance with Grade A.P.T., II, £420-£455.
Applicants must have passed the Intermediate examination of the Royal Institute of British Architects.
The successful candidate will be required to pass a medical examination.
Applications, endorsed "Architectural Assistant," giving age, full particulars of experience and qualifications, and the names of three persons to whom reference can be made, should be received by Mr. L. Hugh Wilson, A.R.I.B.A., A.M.T.P.I., City Architect, not later than Friday, 17th December, 1948.
J. BOYLE, Town Clerk.
Municipal Buildings, Canterbury. 976
24th November, 1948.

BOROUGH OF DEAL.
JUNIOR ARCHITECTURAL ASSISTANT.
Applications are invited from suitably qualified persons for the permanent appointment of Junior Architectural Assistant, in the Borough Engineer and Surveyor's Department.
Salary on Grade I of the National Consolidated Scale of £390 per annum, rising, subject to satisfactory service, to £435 per annum.
Candidates must have had proper training in the profession, and should have had experience in general Municipal architecture.
The appointment will be subject to the Local Government Superannuation Act, 1937, and to one month's notice on either side, and the successful candidate will be required to pass a medical examination.
Applications, stating age, qualifications and experience, with the names and addresses of two persons to whom the Council may refer, must reach the undersigned not later than first post on Monday, the 20th December, 1948.
D. A. DANIELS, Town Clerk.
Municipal Offices, Queen Street, Deal, Kent. 1001
26th November, 1948.

ESTON URBAN DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT (GRADE III OR IV).
Applications are invited for the appointment of an Architectural Assistant, at a salary in accordance with Grade A.P.T., III or IV, of the National Scales, namely £450 to £495 and £480 to £525, according to qualifications and experience.
Applicants should have had good general training with experience in housing work, and preference will be given to candidates who have passed the Intermediate examination of the Royal Institute of British Architects or who are Registered Architects.
The conditions of service are those formulated by the National Joint Council, and the appointment is subject to the passing of a medical examination and the provisions of the Local Government Superannuation Act, 1937. Housing accommodation will be made available to the successful candidate, if required.
Applications, giving full details of training, qualifications, experience, and copies of two testimonials, should be sent to me by first post on Monday, 20th December, 1948.
N. C. HARRISON, Engineer and Surveyor.
Engineer and Surveyor's Dept., Normanby Road, South Bank, Middlesbrough. 998
25th November, 1948.

COUNTY BOROUGH OF WALLASEY.
Applications are invited for the following appointments in the Education Architects' Office:
(a) **ASSISTANT ARCHITECT (Permanent).** Grade A.P.T., V, £520-£570. Candidates should be Registered Architects with good experience in the design and construction of school and preferably Associate Members, R.I.B.A.
(b) **JUNIOR ARCHITECTURAL ASSISTANT (Temporary).** Miscellaneous Division, Grade I, £315-£360. Candidates must be good draughtsmen with general knowledge of building construction, and preferably pursuing their studies for R.I.B.A. qualifications.
Forms of application may be obtained from the Director of Education, Town Hall, Wallasey, to whom completed forms, stating clearly which post is being applied for, should be returned not later than ten days from the appearance of this advertisement.
EMRYS EVANS, Town Clerk. 996
25th November, 1948.

HAMPSHIRE COUNTY COUNCIL.
PLANNING DEPARTMENT.
Applications are invited for the post of an **ASSISTANT COUNTY PLANNING OFFICER** in the County Planning Department. The salary scale is £760 per annum, rising by annual increments of £50 to a maximum of £860 per annum (consolidated). The principal duties of the post will relate to the architectural and amenity aspects of town and country planning, and applicants must, in addition to being Corporate Members of the Town Planning Institute, be also Corporate Members of the Royal Institute of British Architects. Previous experience in a similar capacity in a Government or Local Government Planning Department would be an advantage, but the primary need is for a qualified architect-town planner. The appointment is pensionable, and the salary will be subject to appropriate deductions, and the successful candidate will be required to pass a medical examination. The officer appointed will be required to keep a car and will receive travelling allowance on the County Scale for the time being in force. Applications, stating age, education, qualifications, previous experience, present position, together with a copy of one testimonial and the names and addresses of two persons to whom reference may be made as to professional ability and character, and endorsed "Assistant County Planning Officer," must reach the County Planning Officer, Little Lodge, Clifton Road, Winchester, not later than the 5th January, 1949.
G. A. WHEATLEY, Clerk of the County Council.
The Castle, Winchester. 997
25th November, 1948.

Architectural Appointments Vacant 4 lines or under, 6s.; each additional line, 1s. 6d.

AN expanding Middle East Oil Company urgently requires a **SENIOR ARCHITECTURAL ASSISTANT**, for the London office, to be engaged in the preparation of sketch plans, working drawings and details for domestic, commercial, industrial, social and civic buildings usual to the development of Municipal Estate; at least 5 years' practical experience, if school trained, A.R.I.B.A., or 15 years' experience design and working drawings with architects of standing; quick accurate draughtsmanship, with sound knowledge of construction, essential; age 30-45; salary at least £600 per annum, but according to age and experience. Write giving brief details for application form, and quoting LO 118, to Box "R.P." c/o J. W. Vickers & Co., Ltd., 7/8, Great Winchester Street, London, E.C.2. 740

AN expanding Middle East Oil Company urgently requires an **ASSISTANT ARCHITECT**, in the London office, for the execution of sketch and working drawings connected with any architectural items required, according to senior architectural standard, A.R.I.B.A. preferable; not less than 7 years in drawing offices, engaged on housing schemes, public buildings, town planning, etc.; knowledge of Middle East architectural practice, climatic difficulties, materials, is an advantage; some knowledge of reinforced concrete and specialised construction, including the "Bellrock" system, desirable; age 25-40; salary £600-£750 per annum, according to age and experience. Write giving brief details for application form, and quoting LO 125, to Box "Z.K." c/o J. W. Vickers & Co., Ltd., 7/8, Great Winchester Street, London, E.C.2. 739

NATIONAL COMPANY, with interests throughout the country, require services of an **ARCHITECTURAL ASSISTANT** in their London offices; the work is generally industrial, and calls for quick and accurate draughtsmanship, detailing, and ability to write specifications. make surveys; take levels, and deal with all Authorities concerned; applicants should be capable of taking a job from the sketch stage to final account, with slight supervision; salary £600 per annum; Member of the R.I.B.A. preferred. Box 831.

ARCHITECTURAL DRAUGHTSMAN required by an industrial concern in the East London area; salary from £600. Box 806.

ASSISTANT ARCHITECT required by Samuel Williams & Sons, Ltd., for industrial work at their Dagenham Dock Works and Estate, and in connection with many clients' factories in the Greater London area; applicants should be first-class draughtsmen, with sound knowledge of construction, and not less than 7 years' experience of industrial buildings; a good salary is offered to an experienced man, and the appointment is pensionable; assistance will be given in finding a house if required. Write Personnel Manager, Samuel Williams & Sons, Ltd., Dagenham Dock, Essex. 807

PROGRESSIVE appointment, with prospect of early Partnership, offered to capable and energetic qualified **ARCHITECTURAL ASSISTANT** (30/40) in private general practice near London (E.), with country connections; design, surveying and levelling, and some knowledge of quantities; minimum salary £600. Box 846.

ASSISTANT QUANTITY SURVEYOR required in Manchester office; should be experienced in preparing Bills of Quantities, measuring work, and adjusting variations on Contracts; successful candidate will be required to pass a medical examination for entry into compulsory Superannuation Scheme. Applications, stating age, qualifications, experience, and salary required, with copies only of testimonials, to Box 897.

ARCHITECTURAL ASSISTANT required; experienced in industrial work and working drawings. Write, stating salary and experience, to L. G. Mouchel & Partners, Ltd., 38, Victoria Street, S.W.1. 903

JULIAN LEATHART & TINGAY require two experienced **ASSISTANTS**, to work on military barracks, flats and factories; salary according to experience and ability; interview by appointment. Telephone Welbeck 6555. 905

ARCHITECTURAL ASSISTANT required; preferably experienced in the design, alteration and maintenance of industrial buildings, and capable of preparing surveys, working drawings, details and specifications; knowledge of quantities an advantage; the appointment would be permanent and pensionable. Applications, stating age, experience, qualifications, and salary required, should be sent to the Staff Controller, The Gas Light & Coke Company, 30, Kensington Church Street, W.8. 885

CHELMSFORD Architect requires **ASSISTANT**, qualified by examination or experience. Write full particulars to Box 915.

ARCHITECT, with office in Bedford, requires **ASSISTANT**; capable of taking charge in principal's absence. Reply by letter, stating age, experience, and salary required, Box 916.

ARCHITECTURAL ASSISTANT required in Hertford Office; experience in Housing Contracts essential. Write stating age, experience, and salary required, Box 917.

APPLICATIONS are invited for **ARCHITECTURAL ASSISTANTS**, in the C.W.S. Architect's Department, London; applicants should be good draughtsmen, possess a sound knowledge of building construction, and be capable of preparing working drawings; appointment to the permanent staff, and Superannuation Scheme after 3 months' satisfactory service. Applications, stating age, qualifications, experience, and salary required, to W. J. Reed, F.R.I.B.A., C.W.S. Ltd., Architect's Dept., 99, Leman Street, London, E.1. 923

JUNIOR ARCHITECTURAL ASSISTANT required for general Architectural Practice; also **ARCHITECTURAL ASSISTANT**; Intermediate standard required. Reply, giving experience and salary required, to Bernard Thorpe & Partners, 32, Millbank, S.W.1. 939

COMPETENT ASSISTANT required in the Architect's Department of a Midland Multiple Company. Applicants are requested to give particulars of training, qualifications, age, and salary required, to Box 948.

ARCHITECTS' ASSISTANTS required for Construction Department; large multiple firm, Birmingham office; good progressive position, with superannuation; 5-day week, offered to keen, energetic and capable man; state age, experience, and salary required, Box 955.

ARCHITECTURAL ASSISTANT required by East Midlands Brewery Co., with large and interesting reconstruction schemes in hand for Brewery premises and Licensed properties; applicants should be Associates of the R.I.B.A., with not less than 7 years' office experience, and preference will be given to applicants having experience in the designing and maintenance of Licensed premises. State age and salary required and when available to Box 956.

LOTUS, LTD., STAFFORD.—Appointment of **CHIEF ASSISTANT ARCHITECT**. Applications are invited from suitably qualified persons for the position of Chief Assistant Architect to the Company's Architect, at a salary of £750 per annum, with valuable pension rights; preference will be given to Associates of the Royal Institute of British Architects, and some knowledge of shop design will be an advantage. Applications, giving details of previous experience, and accompanied by copies of three recent testimonials, should be sent to the under-signed on or before 14th December, 1948, G. M. Boon, A.R.I.B.A., Architect to the Company, Lotus, Ltd., Stafford. 968

ARCHITECTS require **ASSISTANT**; A.R.I.B.A., or would consider Student R.I.B.A.; working drawings, specifications, surveys, etc. Watson & Johnson, 5, Victoria Square, Birmingham. 957

SENIOR ASSISTANT required; capable of handling contracts from sketch plan stage to completion; knowledge of industrial work an advantage; salary in accordance with present day standards. Apply in writing to J. Stanley Beard, Bennett & Partners, 101-103, Baker Street, W.1. giving particulars of experience, etc. 987

SENIOR ARCHITECTURAL ASSISTANT required immediately for busy general practice; also **QUANTITY SURVEYOR**, etc.; Quantities, Specifications, Dilapidations, etc.; good salary to suitable applicant. Apply, stating full particulars, Kitching & Co., 21, Albert Road, Middlesbrough. 989

EXPERIENCED ASSISTANT required (convenient self-contained flat provided in central position). Write with full particulars to S. G. Scales, A.R.I.B.A., Eastbourne. 988

ARCHITECTURAL ASSISTANT required; must be competent in the preparation of drawings and specifications for work to licensed premises. Apply General Manager, Tamplin's Brewery, Brighton, stating qualifications and experience. 991

QUANTITY SURVEYOR—Taker-off required; age 27 to 35; A.R.I.C.S. preferred. Write, stating age, experience, etc., to Martin Sheffield, F.R.I.C.S., 29, Sackville Street, W.1. 974

SENIOR and JUNIOR ASSISTANTS required immediately in busy Architect's office; good salaries offered, according to experience. S. J. Stephenson & Gillis, 2, Saville Chambers, North Street, Newcastle-upon-Tyne, 1. 975

E. MAY, Architect and Townplanner, formerly Frankfort-on-Main, requires **TWO ARCHITECTURAL ASSISTANTS**, one of them with some training in townplanning; several years of practical work in Architects' offices conditional; applicants must be healthy, talented young men, hard workers, and preferably unattached; applications to include samples of work, references, photograph, and handwritten summary of age, training and previous experience; starting salary £50 per month, increasing according to ability; share in profits from second year onwards; passage out will be paid. Applications by Airmail to E. May, P.O. Box 1910, Nairobi. 992

ARCHITECT WANTED.—Firm of Architects desires to employ a qualified Architect experienced in fine church design and able to make and supervise the execution of working drawings. Good salary, responsible position and permanent employment for the right man. Stickle, Kelly & Stickle, Registered Architects, 2422, Prospect Avenue, Cleveland 15, Ohio, U.S.A. 1005

JUNIOR Architectural and Surveying Assistant wanted for Licensed Premises and general Estate work. Applications, giving age, salary required and full details of experience, to Architect, Stroud Brewery Co. Ltd., Stroud, Glos. 1013

SENIOR and Intermediate Architectural Assistants required immediately. Salary according to experience and qualifications. Farmer & Dark, Chartered Architects, Terminal House, Grosvenor Gardens, London, S.W.1. 1012

ARCHITECTURAL ASSISTANT required, experienced in quantity surveying and preparation of working drawings and sound knowledge of construction surveying and levelling. Full particulars and salary required to J. M. Porter & Co., The Estate Office, Colwyn Bay. 1011

SENIOR ASSISTANT required for Architectural Department; should be around R.I.B.A. Intermediate standard. Apply, stating age, experience and salary required, to Employment Manager, Rolls-Royce Ltd., Derby. 1010

Architectural Appointments Wanted

APPLICANT, with good experience and references, seeks employment as **CLERK OF WORKS** or supervising officer, with a progressive firm of Building Contractors or Interior Decorators. Box 201.

Other Appointments Vacant

4 lines or under, 5s.; each additional line, 1s. 6d.

TAKER-OFF wanted, with experience in all branches of building work and with sound knowledge of present day prices; appointment to the permanent staff and Superannuation Scheme after 3 months' satisfactory service. Reply, stating age, experience, and salary required, to W. J. Reed, F.R.I.B.A., C.W.S., Ltd., Architect's Dept., 99, Leman Street, London, E.1. 924

RICHARD COSTAIN, LTD., require **ESTIMATOR**; experience in all classes of Building work essential. Apply in writing, giving full details of age, experience and qualifications and salary required, to Personnel Director, Richard Costain, Ltd., Dolphin Square, London, S.W.1. 947

SHOPFITTING DRAUGHTSMAN (SENIOR) required; must be fully experienced in this class of work; sound knowledge of building construction an advantage; West London area. Reply to Box 985.

WORKS MANAGER required for progressive Structural Steelworks. Only those with full qualifications need write in first instance, stating age, experience, and salary required, to Sharman, The Parade, Sunbury, Middlesex. 971

SENIOR STRUCTURAL STEEL DESIGNER-DRAUGHTSMAN required, for progressive Constructional Engineers. Only those fully qualified in the subject, conversant with estimating, etc., and able to take charge, need write in first instance, stating age, experience, and salary required, to Sharman, The Parade, Sunbury, Middlesex. 972

VISITING DECORATIVE ADVISER.—Well-known Paint Manufacturer invites applications for the above post from men of good appearance and pleasing personality, educated to matriculation standard. Applicants should possess outstandingly good colour sense and ability to convey ideas clearly to others. Architectural training an asset, but not essential. Apply, giving full details of training and experience, to Box 1009.

A GOOD and interesting career is offered by an old-established and well-known firm of Paint Manufacturers for a young man with architectural training who is capable of interviewing Architects and Surveyors in London and the Home Counties. Salary and expenses. Write, stating age, education and experience, to Box 1015.

Services Offered

4 lines or under, 2s. 6d.; each additional line, 1s.

J. & C. DOWLING, Surveyors' Typists, seek additional work; Bills of Quantities and Specifications typed or duplicated; bond paper; reliable service; work collected and delivered in the W.C.1 area; specimen pages and price-list on application. Telephone No.: Terminus 5950. 633

ASSISTANT QUANTITY SURVEYOR (30) seeks professional appointment in or near London; Architect's Dept. of Industrial Organization or Business House especially considered; qualifications: R.I.C.S. First Professional, R.I.C.S. Intermediate (except typical), City and Guilds Finalist in Quantities; professional experience; three years full-time building colleges, three years surveyors' offices; salary £450. 17, Malden Hill, New Malden. 887

QUANTITIES, Specifications, Estimates for building or sewerage work; part-time services offered. Box 921.

TRACINGS and Colouring of Drawings undertaken in quick time; neat and accurate; 12 years' experience. Box 937.

ARCHITECTURAL MODEL MAKING.—I am now in a position to undertake the Construction of Models of Bridges, Buildings, Town Planning Schemes; excellent craftsmanship and service offered. Write Stuart, Tiled Lodge, Iver Heath, Bucks. 958

PART-TIME Assistance offered to Architects for building and land surveys, levelling, contouring, etc., for housing schemes, school sites, factory sites, etc.; own car and equipment. Box 973.

CHARTERED ARCHITECT, with own offices and staff, will be pleased to assist busy Architect on housing, industrial, and general work, on fee-sharing basis. Box 770.

For Sale

4 lines or under, 5s.; each additional line, 1s. 6d.

RED Sable Water Colour Brushes, Nos. 0-6; sample set (7 brushes), 22s. 6d., post free, C.O.D. extra. Spur Artists Brush Co., 12, Duke Street, St. James's, London, S.W.1. Whitehall 6640/6988. 662

DRAWING Instruments, about 24 pieces (Reeves), in box, plus rules and protractors, for disposal; £50. Box 969.

ARCHITECT'S Adjustable Drawing Table for Sale (antiquarian size). Box 986.

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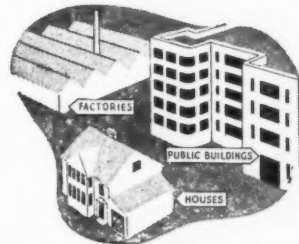
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